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ASIAN PERSPECTIVES

THE BULLETIN OF THE FAR-EASTERN PREHISTORY ASSOCIATION

VOLUME VIII. 1 SUMMER 1964

Editor
WILHELM G. SOLHEIM II

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ASIAN PERSPECTIVES

Bulletin of the Far-Eastern Prehistory Association

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* Forming No. 2 of *Asian Perspectives* Vol. VIII, obtainable separately for HK$20 or US$4 in the Western Hemisphere,

EDITORIAL

EDITING and seeing to the publication of *Asian Perspectives* from the field in northeastern Thailand has led to unexpected delays. Our optimistic forecast that Volume VII would come out in the first semester of 1964 did not develop. I will be in the field in Thailand again while this volume is going through the press so I had better make no predictions.

Our financial situation has improved a bit. We received $1,950 in gifts or grants to help with specific problems. Two grants were made by the Wenner-Gren Foundation for Anthropological Research, one of $100 to cover the costs of illustrating B. B. Lal's two papers on India in Volume VII, and $600 to pay for the translation and plates in this volume's big Japanese Report. From the National Research Council of the United States we received $150 to help cover the cost of Carlyle S. Smith's paper on Easter Island Archæology that appeared in Volume VI; it was one of the twenty papers presented at the Tenth Pacific Science Congress published in Volumes V and VI. The Honolulu Academy of Arts gave us $100 to pay for the plates in Erika Kaneko's report in Volume VII on the Ryūkyūs Survey undertaken under their sponsorship. From Mr Allan Mosher we received $1,000 to pay Mr Colin Smart for managerial assistance, during my absence in Thailand—Mr Smart ran the business end of *Asian Perspectives* from January through September 1964. To all of these sources of needed funds we express our warmest thanks.

Madagascar has now joined Sarawak in making an annual contribution towards the cost of publishing *Asian Perspectives*. We appeal to the Council members of the Far Eastern Prehistory Association to approach their governments to make similar annual grants, so that the journal can play more fully its role of gathering and disseminating information on Man's early migrations and achievements in this part of the world.

The Editor regrets the inconvenience caused to the subscribers of *Asian Perspectives* for the belated publication of this volume. This was due to the nature of the *Japanese Archæological Terms* section by Dr H. Melichar, which is in Japanese *romaji*, Chinese, German and English, with cross indexes.*

W. G. S.

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* Separate copies of this Section (112 pages) are sold for HK$20 or in the Western Hemisphere for US$4.

Account with the University of Hong Kong as of 30 June 1964 for the Period beginning 1 July 1963

Balance brought forward from June 1963	HK$ 6,895·84	
Income		
1. Receipts from Dr W. G. Solheim II (U.S.$2,500)	14,281·86	
2. Receipts from sales by the H. K. University Press	6,331·82	
3. Miscellaneous	54·61	HK$27,564·13
Payments		
1. Printing costs of Volume VI and reprints	HK$17,605·80	
2. Printing costs of Index to Volumes I-V	2,045·00	
3. Printing costs of 3,000 circulars for Vol. VI	300·00	
4. Freight, brokerage, insurance, etc. on Vol. VI *(ii)*	440·30	
5. Commission (25%) on sales	1,423·49	
6. Handling charges, postage and insurance on copies of journal dispatched, proofs, and correspondence	2,515·64	24,330·23
Balance in favour of Association		HK$ 3,233·90

Statement of Accounts as of 30 June 1964
(not including balance in Hong Kong)

	Credit	*Debit*
Cash on hand as of 1 July 1963	US$ 367·89	
Money received (dues, subscriptions, gifts)	4,117·78	
Credit with Library of Congress	4·00	
Funds from sale of Volume II *(ii)*	9·00	
Payment to Colin Smart for managing *AP* 1963-64		US$ 780·00
Postage		181·79
Brokerage and handling (Volume VI and Index)		17·60
Office supplies		22·11
Payment to Library of Congress		4·00
Payment on indebtedness on Volume II *(ii)*		9·00
Deposit to Bursar, University of Hong Kong		2,500·00
Total	US$4,498·67	US$3,514·50
Money on deposit with Chartered Bank, Hong Kong	HK$ 156·05	
Assets in the United States as of 1 July 1964		
Deposits in FEPA account	US$ 984·17	
Indebtedness on Volume II *(ii)*		570·00
Total	US$ 984·17	US$ 570·00

ABBREVIATIONS

AA	*American Anthropologist.*
AE	*Australian Encyclopædia.*
AJD	*Australian Journal of Dentistry.*
AJS	*Australian Journal of Science.*
AR	*University of California, Anthropological Records.*
BAE	*Bureau of American Ethnology.*
BEFEO	*Bulletin de l'École Française d'Extrême-Orient.*
BDAA	*Bulletin of the Department of Archæology and Anthropology, Taipei, Formosa.*
BIEAS	*Bulletin of the Institute of Ethnology, Academia Sinica, Taipei.*
BMFEA	*Bulletin of the Museum of Far Eastern Antiquities.*
BSEI	*Bulletin de la Société des Études Indochinoises.*
BSEO	*Bulletin de la Société d'Études Océaniennes.*
BTLV	*Bijdragen tot de Taal-, Land- en Volkenkunde.*
FEQ	see *JAS*
FMJ	*Federation Museums Journal, Malaya.*
GR	*Geographical Review.*
IB	*Information Bulletin, Pacific Science Association.*
ILN	*Illustrated London News.*
JAOS	*Journal of the American Oriental Society.*
JAS	*Journal of Asian Studies*, formerly *FEQ: Far Eastern Quarterly.*
JEAS	*Journal of East Asiatic Studies, Manila.*
JMBRAS	*Journal of the Malayan Branch, Royal Asiatic Society.*
JPS	*Journal of the Polynesian Society.*
JRAI	*Journal of the Royal Anthropological Institute of Great Britain and Ireland.*
JSO	*Journal de la Société des Océanistes.*
JSS	*Journal of the Siam Society.*
KZ	*Kōkogaku Zasshi.*
M	*Man.*
MH	*Malaya in History.*
MJTG	*The Malayan Journal of Tropical Geography.*
MNMV	*Memoirs of the National Museum of Victoria.*
MS	*Monumenta Serica.*
NAM	*North Australian Monthly, Townsville, Queensland.*
NGS	*Nieuw Guinea Studiën.*
NZAAN	*New Zealand Archæological Association Newsletter.*
O	*Oceania.*
PEFEO	*Publications de l'École Française d'Extrême-Orient.*
PFFEPC	*Proceedings of the Fourth Far-Eastern Prehistory and the Anthropology Division of the Eighth Pacific Science Congresses Combined, Quezon City, Philippines.*
PIM	*Pacific Islands Monthly, Sydney.*
PJS	*Philippine Journal of Science.*
PKNAW	*Proceedings Koninklijk Nederlandsch Akademie Wetenschappen.*
SA	*Scientific American.*
SJA	*Southwestern Journal of Anthropology.*
SMJ	*Sarawak Museum Journal.*
TBG	*Tijdschrift Bataviaasch Genootschap.*
VKNAW	*Verhandelingen Koninklijk Nederlandsch Akademie Wetenschappen.*
VTLV	*Verhandelingen tot de Taal-, Land- en Volkenkunde.*
W	*Walkabout, Melbourne, Australia.*
WW	*Wen Wu* 文物.
ZMRNH	*Zoologische Mededelingen Rijksmuseum van Natuurlijke Historie.*
ZFE	*Zeitschrift für Ethnologie.*
ZVRNH	*Zoologische Verhandelingen Rijksmuseum van Natuurlijke Historie.*

I

Eastern Asia and Oceania

WILHELM G. SOLHEIM II

Several areas do not appear in this year's news and bibliography. This is either because there is relatively little to report or because, though much work is in progress, the editor is alone in the field or in a group of active field-workers. Others have much of their time taken up by administrative duties in a national museum or by archæological survey. Thus Allan Smith's duties as Program Director for Anthropology in the National Science Foundation have prevented him from contributing his usual reports on the Ryūkyūs and Micronesia.

MEETINGS

Two international meetings took place in 1964 in which the Far-Eastern Prehistory Association was officially represented or acted as one of the sponsors. Wilhelm G. Solheim II and Chester S. Chard represented the FEPA in Moscow at the Seventh International Congress of Anthropological and Ethnological Sciences. The International Conference on Asian History, held at the University of Hong Kong, was co-sponsored by the FEPA.

The Seventh International Congress of Anthropological and Ethnological Sciences was held in Moscow from 3 to 10 August 1964. From 4 to 7 August, papers were presented at numerous concurrent sessions. Abstracts and, in many cases, the full paper were available on or before the day of their reading. Several people at the last moment were unable to attend and their papers, though on the programme, may or may not have been presented *in absentia*. On the 8th and the morning of the 10th a number of symposia were held; some were open, so that anyone could present a communication on a subject included in the symposium title. Others were rigidly organized with written papers presented according to a schedule worked out by the secretary of the symposium. Written papers were also presented in the open symposia and thus numerous papers do not appear in the programme.

Meetings were held at the University of Moscow. The programme, living arrangements, transportation, and tours were well organized. The major in-Congress tour was held on Sunday the 9th with a boat trip through canals and rivers near Moscow. Post-Congress tours to areas in European and Asian Russia were attended by many. The opening and closing general sessions had headphones available for simultaneous translation and this worked very efficiently. It was announced at the closing session that the Eighth Congress would be held in Tokyo in 1968.

Our greatest pleasure at the Congress was meeting our Russian colleagues. I shall mention two of them lower down in the section on North Vietnam. Miss R. Ch. Djarylgassinova of the Institute of Ethnography, University of Moscow, deserves a special mention for briefing us on work done in North Korea.

At a business meeting of the International Union of Anthropological and Ethnological Sciences held on the boat tour, it was tentatively decided to merge the International Union and the International Congress organizations. The governing board urged the members present to bring in more members. The FEPA has already been a member of the Union for some years. Only organizations, i.e., institutes, departments, societies, etc., can belong. It is suggested that all archæological organizations in the FEPA area join the Union and take part in its activities and those of the International Congress. For information write to: Professor Dr Lawrence Krader, Secretary General, International Union of Anthropological and Ethnological Sciences, Department of Sociology and Anthropology, Syracuse University, Syracuse, New York 13210, U.S.A.

Among the numerous papers of interest to FEPA members, omitting those papers that were not presented, were:

PALÆOETHNOGRAPHIC SECTION

Early radiocarbon dates for pottery in Japan and their implications	*C. S. Chard* (U.S.A.)

AUSTRALIA AND OCEANIA SECTION

The migrations of the Malayopolynesians	*I. Dyen* (U.S.A.)
Excavations on Pitcairn Island, 1964	*P. Gathercole* (N.Z.)
Place-names of Easter Island	*A. A. Koskinen* (Finland)
How far is Easter Island culture Polynesian?	*T. Heyerdahl* (Norway)
Prehistory of Polynesia	*K. P. Emory* and *Y. H. Sinoto* (U.S.A.)
Archæological investigations at Pekia, Hiva Oa, Marquesas Islands	*C. S. Smith* (U.S.A.)
Parallèles entre la tradition migratoire des insulaires et la caractéristique anthropologique comparative des populations de l'Océanie	*A. Godlewski* (Poland)
Linguistic evidence of migration tracks in the Western Pacific	*P. A. Lanyon-Orgill* (Canada)
On the ethnic origin of the Australian aborigines	*V. R. Kabo* (U.S.S.R.)
Investigation of the historical validity of oral traditions on Ponape	*S. H. Riesenberg* (U.S.A.)

FAR EAST AND SOUTH ASIA SECTION

The main phases of formation of the racial composition of the population of eastern Asia	*N. N. Tcheboksarov* (U.S.S.R.)
Problems of linguistic alignment in eastern Asia in light of its ethno-history	*S. Aroutiounov* (U.S.S.R.)
Glottochronology and the Sino-Tibetan linguistic family	*S. E. Yahontov* (U.S.S.R.)
The ethno-historical structure of the Japanese people	*M. Oka* (Japan)

An ethno-historical study concerned with the minority people (Miao and Yao) in S.W. China	*J. Shiratori* (Japan)
Archæological research in Thailand: prehistory	*W. G. Solheim II* (U.S.A.)
Once more about the origin of the Lopnor	*E. R. Tenishev* (U.S.S.R.)

ARCTIC AND SUB-ARCTIC

The first human settlers in Siberia and new palæolithic discoveries on the river Zeya	*A. P. Okladnikov* (U.S.S.R.)
New data on the archæology of northeastern Siberia	*N. N. Dikov* (U.S.S.R.)
Ancient tombs of Chukotsk and some aspects of the Eskimo problem	*M. G. Levin* and *D. A. Sergiev* (U.S.S.R.)
Classification of blood groups of the people of northern Siberia	*I. M. Zopotareva* (U.S.S.R.)

PROBLEMS OF THE ETHNOGENESIS OF ANCIENT AND MODERN PEOPLE (SYMPOSIUM)

Correlation of the northern and southern components in the ethnogenesis of the Koreans	*R. Ch. Djarylgassinova* (U.S.S.R.)

Asian History Conference. An International Conference on Asian History was held at the University of Hong Kong from 30 August to 5 September 1964. Most of the papers presented had been mimeographed and sent out to all participants so that they could be read before the meeting. Papers were not read out, but authors were given the opportunity to make changes or additions before an assigned discussant made his remarks. Following the discussant's remarks five to ten minutes were allowed for general discussion.

The material and social arrangements were well handled. For the archæologists the primary tour was the trip by Shell launch to Lantau Island on the afternoon of 1 September. After a good walk back from the archæological site, the refreshments served were most welcome.

The meeting was saddened by the sudden death of D. Caroll, S.J., of the Five-Language Dictionary Project in Taichung, Formosa. He was off by himself checking sites on Lamma Island where he suffered a heart attack. He was to have presented a paper titled 'Man and the Mollusc' at the second archæology session. At the session a brief moment of silence was held in his memory.

The first archæology session, titled 'Reports on Work-in-Progress', was chaired by Tom Harrisson of the Sarawak Museum. Reports scheduled and given were: 'Archæology and radiocarbon dating in the southern New Hebrides', by Richard Shutler; 'Archæological site survey and settlement patterns in the southern New Hebrides', by Mary E. Shutler; and 'Recent work in Thai prehistory', by Wilhelm G. Solheim II. A non-scheduled report on recent research on beads in Southeast Asia was presented by Alastair Lamb, followed by a spirited discussion.

The second session, titled 'Recent Research in Archæology', was chaired by Wilhelm G. Solheim II, of the University of Hawaii. Reports scheduled and given were: 'The beginning of rice cultivation in Korea', by Kim Won-yong; and 'Traces of routes in the eastern part of the Yin-Shang Empire', by Shih Chang-ju. A non-scheduled report on recent research in Malaya was presented by Colin Jack-Hinton.

Tom Harrisson presented a public lecture and film on the archæological work at Niah Cave in Sarawak, which, as usual, was well presented and well received. Numerous history papers were of interest to archæologists, but are not listed here.

Eleventh Pacific Science Congress. The *Information Bulletin*, 16(2), April 1964, of the Pacific Science Association, gives the following news about the Eleventh Pacific Science Congress: 'At the first general meeting of the Organizing Committee for the 11th Pacific Science Congress held at the Science Council of Japan in Tokyo on February 29, 1964, it was decided that the 11th Pacific Science Congress would convene in Tokyo on Monday, 22 August, and end on Saturday, 10 September, 1966. Of the two weeks of formal sessions, the first week will be spent mainly on symposia and the second week on divisional meetings. Intrasessional and post-sessional field trips have also been planned'.

The Secretary-General of the Congress is Dr Yoshio Hiyama, Science Council of Japan, Ueno Park, Taito-ku, Tokyo. The Chairman of the Organizing Committee is Dr Sinitiro Tomonaga, who is also President of the Science Council of Japan. The Chairman of the Section of Anthropology in the Organizing Committee is Dr Ichirō Yawata, Professor, Faculty of Literature, Tokyo Kyoiku University, Otsuka Kubomachi, Bunkyo-ku, Tokyo; and the Secretary is Dr Toru Mineya, Assistant Professor, Faculty of Letters, University of Tokyo, Motofuji-cho, Bunkyo-ku, Tokyo.

EASTERN ASIA

Korea

A recent issue of the *Korea Journal*, 4(7), 1964, devoted to Korean History, contains three articles of interest to the archæologist: 'Early history of Korean society', by Lee Hong-jik (4–9); 'Three kingdoms and their civilization', by Yi Pyong-do (10–15); and 'Northern invasions and Korean resistance', by Lee Ki-baik (16–18, 32). These articles by authors eminent in their fields are so far the best summaries of these subjects which we have.

China

On the manufacture of pottery and porcelain, in *La Revue des Arts Asiatiques*, 9(i–ii), 1962–1963, there is an interesting article by P. Huard and Ming Wong, entitled: 'Un album chinois de l'époque Ts'ing consacré à la fabrication de la porcelaine', with 28 reproductions of paintings in the album. They illustrate the whole process of manufacture from the gathering of the clay through its firing, packing for market, and marketing.

India

In his report of a Seminar on Indian Prehistory and Protohistory held at the Deccan College Postgraduate and Research Institute in Poona in May 1964, Dr V. N. Misra says:

> A Seminar on Indian Prehistory and Protohistory was held by the Department of Archæology of the University of Poona at the Deccan College Postgraduate and Research Institute, Poona, from 25 May to 30 May 1964. The Seminar was sponsored by the University Grants Commission. About sixty delegates from the Archæological Survey

of India, State Department of Archæology, Universities, Council of Scientific and Industrial Research, National Museum and the Tata Institute of Fundamental Research attended the Seminar. Its purpose was to discuss the research work done in Indian prehistory and protohistory during the last decade or so and its bearing on the various problems of Indian prehistoric archæology.

Eleven topics were selected for discussion. Papers were invited from well-known scholars and selected experts were asked to offer written comments on them. These papers with the comments were cyclostyled and distributed to all the participants before the opening of the Seminar. The Conveners of different topics initiated the discussion by highlighting the main problems in their subjects on the basis of their own papers as well as experts' comments. The discussion was then open to all the participants.

The papers presented at the Seminar were:

1. 'Is Soan a separate culture?' by Shri K. V. Soundara Rajan, Superintendent, Archæological Survey of India, Western Circle, Baroda.
2. 'The Pleistocene Stratigraphy in India', by Dr Vishnu-Mittre, Birbal Sahni Institute of Palæobotany, Lucknow. As Dr Mittre could not be present at the Seminar, this Section was presided over by Dr A. P. Khatri of the Council of Scientific and Industrial Research.
3. 'Middle Stone Age in India and Pakistan', by Dr H. D. Sankalia, Professor and Head of the Department of Archæology, Deccan College, Poona.
4. 'The Mesolithic Phase in the Prehistory of India', by Dr V. N. Misra, Lecturer in Prehistoric and Protohistoric Archæology, Poona University, Poona.
5. 'Neolithic problem in India', by Shri B. K. Thapar, Superintendent of Archæology, Archæological Survey of India, Nagpur.
6. 'The extent, origin, authors and chronology of the Indus Civilization', by Shri A. Ghosh, Director-General of Archæology in India, New Delhi.
7. 'Indian chronology and C-14 dates', by Professor H. D. Sankalia.
8. 'Relationship of the chalcolithic cultures with West Asia', by Shri B. K. Thapar.
9. 'Iron Age in India', by Dr N. R. Banerji, Superintendent, Archæological Survey of India, Agra.
10. 'Soils as chronological and environmental tools', by Dr B. B. Lal, Archæological Chemist, Archæological Survey of India, Dehra Dun.
11. 'Archæology and Education', by Professor H. D. Sankalia, Poona.

Three other papers received for the first, second and tenth items were: 'The criteria of Soan Culture', by Shri D. Sen, Reader, Department of Anthropology, Calcutta University; 'Pleistocene stratigraphy in India', and 'Soils as chronological and environmental tools', by Dr R. V. Joshi, Superintendent of Prehistory, Archæological Survey of India, Nagpur.

As the Seminar had only two months to get organized, the plan to obtain written comments on all papers could not materialize. Most of the papers arrived late; nevertheless written comments were received on the following papers:

3. 'Middle Stone Age in India and Pakistan', by Dr G. C. Mohapatra, Department of History, Punjab University, Chandigarh.
4. 'The Mesolithic phase in the prehistory of India', by Professor G. R. Sharma and Shri Radha Kant Varma, Department of Archæology, University of Allahabad.
5. 'Neolithic problem in India', by Dr V. N. Misra.
6. 'The extent, origin, authors and chronology of the Indus civilization', by Shri M. N. Deshpande, Superintendent, Archæological Survey of India, Dehra Dun; Shri M. S. Dhaky, Technical Assistant, Gujarat State Department of Archæology, Rajkot; Shri S. R. Rao, Superintendent of Archæology, Archæological Survey of India, Madras; and Dr Y. D. Sharma, Deputy Director-General of Archæology, New Delhi.

7. 'Indian chronology and C-14 dates', by Shri R. C. Gaur, Lecturer in Archæology, Aligarh Muslim University, Aligarh, and Dr Y. D. Sharma.
10. 'Soils as chronological and environmental tools', by Dr G. G. Mujumdar and Shri S. N. Rajguru, Lecturers in Archæology, University of Poona and Deccan College respectively.

The discussions were lively and fruitful, but none took place on 'Indian chronology and C-14 dates' and 'Archæology and education' as the proceedings were adjourned for a day on 28 May as a mark of respect to the memory of Mr Jawaharlal Nehru.

One afternoon was devoted to on-the-spot discussion of the river stratigraphy at the the sites of Datta Wadi and Kondhala near Poona on the river Mutha.

The Department of Archæology, Poona University, plans to publish the papers with comments and discussions at an early date. The Seminar, even though hurriedly arranged, was eminently successful in achieving its objectives and all the participants expressed the desire for similar seminars from time to time to bring together the workers in the field and review the progress of research. The Director-General of Archæology in India, Shri A. Ghosh, has promised to explore the possibilities of holding the next Seminar under the auspices of the Archæological Survey of India.

South-east Asia

North Vietnam

At the Congress in Moscow we had the pleasure of meeting two Russian archæologists who work in North Vietnam. Dr P. I. Boriskovsky, a contributor to *Asian Perspectives* (*AP*, **6**: 23–30), showed me several 'palæolithic' stone tools discovered on Mt Do (*ibid.*, 24–26). Knowing little about the early palæolithic tools of western Europe, I cannot say whether what I saw finds place in the European classification system. However, they were not the typical chopper-chopping tool variety that one usually sees in Southeast Asia. Boriskovsky called my attention to a few errors of translation in his *AP* articles* and gave me a short article on recent work in North Vietnam which will appear in *AP*, **9**. The second archæologist, Dr D. V. Deopik, of the Institute of Oriental Language, University of Moscow, is at present studying bronze and iron artifacts found in Southeast Asia while continuing his special interest in Vietnam.

Thailand

The National Museum is continuing the field work begun by the Thai-Danish expedition at Kanchanaburi. In April 1964 a site was reported near Lopburi, in central Thailand. A large test pit, excavated by the National Museum, revealed that this is a rich site which may well begin in late neolithic times and continue without apparent interruption into fully historic times. Full-scale excavation is planned for February 1965.

The University of Hawaii-Fine Arts Department Archæological Salvage Program in north-eastern Thailand began work in the field in November 1963. It is under the direction of Wilhelm G. Solheim II and is supported by a United States National

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* The corrigenda to *AP*, **6**: 29–30 are as follows: *p. 26*, beginning of the third paragraph should read 'Soviet geologists' instead of 'Soviet biologists'; *pp. 24 and 29*, the name of the Bronze Age site should be 'Thieu du'o'ng' instead of 'Thien-du'o'ng'; *p. 30*, bibliography: *Review of Prehistoric Studies* should read *Review of Historical Studies.*

Science Foundation grant. Several dams are in varying stages of construction on the Korat plateau and our task is to explore the reservoir areas and save as much archæological data as possible before the water is let in. The first season was spent exploring and testing a few sites. The second season will be devoted primarily to the excavation of those sites and to extending our exploration to new areas.

Publication of the results of the Thai-Danish expedition's excavation in Kanchanaburi should begin in 1965. The first of about five volumes will probably be the report by van Heekeren of his excavation at Sai Yok. Per Soerensen's first volume, due to come out late in 1965, will be on the burials of Ban Kao and their associated artifacts.

Indonesia

The government archæological service in Indonesia has been reorganized under the new title of Lembaga Purbakala Dan Peninggalan Nasional (The National Archæological Institute of Indonesia). Dr R. Soekmono is the Director of the new Institute and Dr R. P. Soejono is the head of the Department of Prehistory. Further details are still awaited.

Field work continues at Sangiran with further finds of pithecanthropoid teeth. A major excavation of Gilamanuk, in west Bali, was being done in late 1964. From previous work it appears to be an Early Iron Age site with pottery belonging to the Sa-huỳnh-Kalanay Pottery Tradition (see *AP*, **6**: 40–41). From Father Verhoeven, who is doing active exploration on Flores, we hope to have a report on pottery finds in the next volume of *AP*.

Malaysian Borneo

Work at Niah and other well-known archæological areas in Sarawak is now expanding to include excavation begun in Sabah (see pp. 171–80 for Tom Harrisson's report).

In Borneo, as elsewhere in Southeast Asia, caves are relatively easy to find and often rich in archæological data. Tom Harrisson recently wrote a note on 'Borneo Caves' in *The Sarawak Gazette* of 31 March 1964, **90**(1273): 46–49, from which the following paragraph is taken:

> I want to give this broader impression emphasis, because the potential for cave exploration and to a lesser extent for cave archæology in Borneo is (if fully controlled) considerable. The fact that virtually all the recent work has been done in the State of Sarawak by no means necessarily implies that the Sarawak caves are necessarily the most important—though it is likely that the Niah cave group in the Mount Subis massif is the greatest and richest from all points of view, not only in Borneo, but in South-East Asia: (the main part of the Great Cave itself has a floor-area of twenty-seven acres; our main path through it, 1,400 yards in darkness). Undoubtedly, further research will show, for instance, that practically every cave which meets a certain set of criteria will contain archæological remains *anywhere* in Borneo. In the future planning of cave work anywhere in Borneo, it will be important to *select*, on additional criteria of research need, certain caves which are likely to have *special* characteristics; to be workable without excessive cost, and to produce additional research results comparable with the very considerable effort that anything of this kind requires in the Borneo climate and conditions. (p. 46)

Philippines

The excavation under way in Lipuun Point Caves on the west coast of Palawan may, in the near future, disclose that they are no less important than the Niah Caves of Borneo in reconstructing Southeast Asia's prehistory. Dr Robert Fox, who is in charge of the excavations for the National Museum, spends most of his time in the field. His yearly reports to the National Museum contain much information and these and other materials are being prepared for publication (see Solheim on 'Further relationships of the Sa-huỳnh-Kalanay Pottery Tradition' (pp. 196–211).

The interest among Philippine intelligentsia, and even the common Filipino, in the prehistory of the Philippines is probably greater than elsewhere in Southeast Asia; this, unfortunately, is a mixed blessing. During the last ten years a number of professional 'collectors' have searched for archæological sites, and then ravaged them for porcelain, stoneware, and reasonably whole earthenware. The best pieces go into a few absolutely astonishing collections in Manila, while the rest is sent to various 'art' stores to be sold to tourists. A publication will appear shortly on one of these collections and let us hope reports on more of them will follow.

Formosa

Dr Q. C. Chang, our Regional Editor for Formosa, is conducting a year's programme of archæological research on the island in 1964–65, and we may expect to see his report in *AP*, **10**, if not in *AP*, **9**.

OCEANIA

Micronesia

This is the only major area in the Pacific where no active programme of archæological excavation is under way, but this situation may change in the not distant future with a joint programme of American and Japanese archæologists.

A microfilm copy of *Micronesian archæology: an annotated bibliography* (1964) by Peter Sherwood Chapman, which we recently received in Hawaii, is his Master's thesis at Stanford University and is available from University Microfilms, Inc., Ann Arbor and London. It brings together a considerable body of information of value to the study of Micronesian prehistory. An appendix contains 82 pages of translation from ten Japanese articles on specifically archæological subjects. One section, titled 'Peopling of the Pacific' (pp. 36–41) presents the different theories on the peopling of Micronesia. We know that Indonesia, South China, Melanesia, and Polynesia were important sources for the peopling of various areas of Micronesia, but why have we no published source about a population movement coming from the north? The north, probably Japan, is a likely source of the first settlers in Micronesia as I have suggested in my paper 'Further notes on the North Pacific origin of some prehistoric elements of Oceanian material culture', in *Proceedings of the Ninth Pacific Science Congress, 1957*, **3**(1963), Abstract, p. 48.

Polynesia

The Pacific Area Archæology Program has now completed most of the excavational stage of its first three-year plan for Polynesia and the laboratory work and writing up of the collected material is now under way. The Polynesian section is absent in this volume because its editor, Dr Sinoto, was in the field much of 1963 and 1964 in Tahiti and the Marquesas working on the Bishop Museum portion of the PAAP programme.

A second portion of the PAAP programme was announced by the Bishop Museum early in 1964. According to this announcement,

> A grant of $67,100 has been made to Bishop Museum by National Science Foundation for a three-year program of archæology in the Hawaiian Islands under the direction of Dr Kenneth P. Emory, Chairman of the Department of Anthropology of the Museum. To date fewer than ten major site excavations have been made in the Hawaiian chain, and only in the area of South Point on the island of Hawaii did they reach levels where the forms of the artifacts differed significantly from those prevalent at the time of European discovery. As a result of the knowledge gained in the Society and Marquesas islands through the present Bishop Museum Polynesian Archæology Program, the source of the early culture unearthed at South Point seems to have been the Marquesas Islands. Forms representative of the historic period seem to have been due to a very strong, but later, influence from the Society Islands. Intensive work is now needed in the Hawaiian Islands, as well as the Marquesas and Society Islands to obtain sufficient data to test the validity of this theory.—From the Pacific Science Association *Information Bulletin*, 16(2), April 1964: 11.

The Cellar Book Shop has become the exclusive distributor in the U.S.A. of the Polynesian Society publications. Orders should be placed direct with The Cellar Book Shop, Box 6, College Park Sta., Detroit, Michigan 48221, U.S.A. It carries in stock all the publications still in print for spot delivery. Orders sent to New Zealand will be turned over to the Cellar Book Shop for attention.

Melanesia

The editor for Melanesia, Dr Richard Shutler Jr, has been conducting a programme of survey and excavation for the Bishop Museum in the southern New Hebrides. Being in the field much of 1964 Shutler was unable to prepare the section for Melanesia. There will be a substantial section for Melanesia in *AP*, 9.

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Northeast Asia

CHESTER S. CHARD

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FIELD WORK

We have little information on field work in Siberia since 1960. The radiocarbon date from the famous palæolithic site of Afontova Gora II (see *Geochemistry* 1963, 9) was made from a sample, which was not given preliminary treatment. It came from between the lower and middle levels of the site, 6–8 metres below the surface. The age determination was 11,335 ± 270 years (MO–343). The previous guess date had been 15,000–25,000 B.C.

On Mongolia, thanks to the prompt reporting of A. P. Okladnikov, we are able to record here the important results of the Soviet-Mongolian Expedition of 1961–62.

In Siberia in 1961, the Krasnoyarsk Expedition under M. P. Griaznov excavated Afanasievo and Karasuk cemeteries as well as sites of the 6th–5th centuries B.C. Half of a large pit-house was uncovered at the Karasuk settlement of Kamennyi Log. In the southern Altai, S. S. Sorokin made a reconnaissance along the Bukhtarma River and excavated kurgans of the Maiemir, Pazyryk-Shibinsk and Turkic periods at Kurtu. R. V. Nikolaev surveyed the route between Abakan and Taishet. On the Chukchi Peninsula, D. A. Sergeev discovered another Old Bering Sea cemetery and opened 18 graves. A preliminary report in English by Arutiunov, Levin and Sergeev appears in *Arctic Anthropology*, 2(1).

The major 1961 excavation in Mongolia was carried out at the stratified upper palæolithic site of Moil'tyn-Am on the left bank of the Orkhon River near Erdeni-Dzu and Karakorum, which was occupied from early Upper Palæolithic to early Neolithic. Four levels were identified in the 1–1·5 metre deposit, showing the sequence of cultural development during this period and the way in which the distinctive features of the Inner Asian Upper Palæolithic arose. Living complexes were uncovered as well as a very large number of stone artifacts. Okladnikov considers it one of the most remarkable palæolithic sites in Asia and the key to understanding the Upper Palæolithic over much of the continent—it may help solve the enigma of the origin of the Siberian Palæolithic. In Okladnikov's opinion, the Mongolian Upper Palæolithic shares many basic features in common with the Siberian, and also resembles the pebble cultures of Inner Mongolia and North and Central China. This indicates a close cultural contact between Siberia, Mongolia and China from early times, and that their ancient cultures were of the same general nature and followed a common pattern of development which is now defined under controlled conditions at Moil'tyn-Am.

The lowest level here contained large flakes and blades of archaic appearance and single and double-platform Levallois cores; disc-shaped cores and points were rather uncommon. These are associated with a variety of choppers and chopping tools typical of the pebble cultures of eastern and southeastern Asia. The presence of the latter, along with the geological context, led Okladnikov to assign an early upper palæolithic age to the horizon rather than lower palæolithic or Mousterian. However, the geology should be studied by a Quaternary specialist before a final conclusion is reached. (There is no mention of faunal remains.) Levels 3 and 2 reflect the main part of the Upper Palæolithic. Although the general conservatism and tenacious survival of basic types of early tool gives the impression of stagnation, closer examination revealed the appearance of new technological features and the gradual improvement, increase and growing diversity of flake and blade tools. These two levels are closely related to the Siberian Palæolithic. The Mesolithic of this part of the continent is reflected in the upper (Holocene) horizon. Despite a certain trend towards smaller artifacts, and further improvements in the technique of stoneworking, archaic elements still survive (such as pebble tools) and the culture in general must still be classified within the upper palæolithic tradition. Thus the Mesolithic of Inner Asia, Okladnikov points out, like that of Siberia, has proved to be of quite different type from contemporary cultures to the west—even those in adjacent Soviet Central Asia. In situations of disturbed stratigraphy, it would be very difficult to distinguish the mesolithic material from the main body of palæolithic artifacts.

The validity of regarding Moil'tyn-Am as a type site for the Mongolian Upper Palæolithic was confirmed by a number of sites of comparable age in other parts of the country, in particular in the region of Ulan-Bator.

Considerable attention was also paid to earlier remains. Near Ikh-Bogdo, in a completely desert region without trace of ancient water sources, the expedition discovered a surface site classified as Mousterian on the basis of lithic techniques and state of preservation of the artifacts (heavy patination, desert varnish). The complex here, like that at Otson-Man't, is considered to be of Western type in its basic features, in contrast to the East Asian complexion of the upper palæolithic pebble industry.

The discovery in the Arts-Bogdo region of a vast workshop area covering some 100 square kilometres is of particular interest. From Mousterian and possibly earlier times to the early Bronze Age, it was resorted to for its outcrops of red and yellow jasper. According to Okladnikov there is probably nothing quite comparable elsewhere in the world. Here can be studied the manner of securing raw materials, their primary working and their transportation all over Mongolia and perhaps beyond, at different periods.

Numerous neolithic sites were also examined in the Tugriken-Shiret district which compare well with the famous complex at Shabarakh-Usu in terms of yield and clear stratigraphy. The sites are covered with dunes formed after abandonment of the area due to climatic deterioration. Fragments of grinding stones suggest farming.

Turning to 1962, in Siberia the Tuva Joint Archæological-Ethnographic Expedition directed by L. P. Potapov continued its excavations in cemeteries of the Hun period (middle first millennium A.D.) in southern Tuva, which reflect the life of the nomadic population of the time. The first large cranial series in this part of Asia were recovered and are expected to shed significant light on the ethnogenesis of the modern Tuvinians. The main focus of investigation was the Kokel' cemetery, where over 50 graves were opened. On the Chukchi Peninsula, excavations continued in the Ekven cemetery; the human remains recovered may illuminate the problem of the origin and formation of the ancient coastal population of this side of Bering Strait.

The 1962 Soviet-Mongolian Expedition discovered an important new workshop near Bogdo-Somon that is considered the oldest site yet found in Inner Asia—an attribution based on the archaic lithic techniques and typological features, and its state of preservation. The finds are mainly big, massive flakes showing a very large bulb of percussion and an angle between striking platform and cleavage surface in excess of 90°, and cores of very diverse forms but overwhelmingly of Levallois type, both single and double platform—as a whole the site must be dated to late Acheulean or early Mousterian, with one locality possibly classic Mousterian. Significant features of the assemblage are reported to be typical of early sites to the West in Soviet Central Asia, the Altai and the Near East, thus confirming the view that the initial settlement of Inner Asia was from the west.

The vast workshop discovered the year before near Arts-Bogdo has been further investigated but much remains to be done, especially in the identification of complexes of different ages. The main body of materials belongs to the Upper Palæolithic. At one locality tested, subsurface material was found to a considerable depth; this is one of the few portions that would repay excavation.

The early site of Otson-Man't on the Sino-Mongolian frontier was revisited and several new localities were discovered. Of great interest is Locality B, regarded as a single late Mousterian complex of classic type. Although the cultural deposit had been completely eroded by wind action, the majority of the 3,000 lithic remains were in their original position. Thus a settlement, that would have required a month to lay bare by excavation, could be mapped, plotted and studied in a single day. The diagnostic artifacts at Locality B were the classical triangular cores of Mousterian type, according to Okladnikov. Altogether, the vicinity of Otson-Man't shows a series of stages of cultural development from late Acheulean to early Neolithic, when the area was evidently abandoned due to marked climatic change. (The earlier occupations, studied in 1960, are described in *AP*, **6**.)

Several significant new upper palæolithic settlements were discovered near Ulan-Bator, including a three-level site near the old Chinese cemetery with a depth of 2 metres and another near the radio station at Uliastai. A week's excavations in the latter yielded large numbers of artifacts, faunal remains (chiefly horse) and a hearth. All of these sites are said to supplement the picture of upper palæolithic cultural development derived from Moil'tyn-Am.

Six pebble-tool sites were located on the eastern shore of Lake Orok-Nor, extending the area of this tradition in a new direction. Sites of a different nature, regarded as terminal upper palæolithic or possibly mesolithic, were found on river terraces 140 kilometres south of Sukhe-Bator. Here large numbers of flakes, lamellar blades and a series of prismatic, conical and cylindrical cores were collected in extensive sandy blowouts. Scrapers made on flakes and blades predominate; pebble tools are not typical. Close resemblances were seen to a number of late upper palæolithic sites on the Selenga River in Trans-Baikal.

Neolithic sites near Tupik spring at Arts-Bogdo were characterized by typologically diverse miniature tools showing a high level of craftsmanship, made mostly from flakes. Many typical neolithic conical and prismatic cores also occurred. In the Pestroi Valley not far from Tugriken-Shiret, the site of an ancient lake, were wind-eroded hearths among the low dunes surrounded by concentrations of neolithic-type cores, flakes and blades. Whereas at Tupik almost every flake had been retouched and used as a tool, here, in contrast, the flakes were not retouched. Such a striking difference can hardly be fortuitous, it is felt. (There is no reference to the presence of pottery on any of the neolithic sites.)

For 1963 our information on the activities of A. P. Okladnikov and his colleagues are from personal correspondence. In Mongolia, excavations continued at sites near Ulan-Bator, Erdeni-Dzu and Bogdo-Somon. Stratified eneolithic dune settlements at Bulgan-Somon were also investigated. On the Pacific coast, Tadusha, the first indubitable mesolithic site in the Maritime Territory according to Okladnikov, was examined and parallels with Japan are reported.

The major excavation, under the immediate direction of V. E. Larichev, was at Kondon near Komsomolsk on the Amur, where there is a succession of adjacent pit-house settlements of different periods. A number of large houses were cleared that are considered to date from a rather early stage of the Neolithic. (The adzes found—plano-convex with pointed butt—are regarded as the earliest local type. Also present are unifacial blade arrow-points, considered to be the first type of point to appear on the Amur, although here they are associated with ordinary bifacial forms.) Of interest are the finds of lamellar blades, not characteristic of the lower Amur, which may indicate northern contacts; the use of nephrite, which had to be imported from a long distance; the Gobi-type core-scrapers, here making their northeasternmost appearance in Asia (en route, it is suggested, to Alaska); and an outstandingly realistic clay figurine of a female—perhaps an actual portrait. Two pottery wares are mentioned: one richly decorated with a variety of all-over complicated curvilinear designs in combination with geometric figures, which can hardly be compared with any other wares; and another decorated by the use of baked clay stamps, including dentate ones. Examples of the latter with zigzag designs have close parallels in Manchuria.

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1962 Ukrasheniia paleoliticheskogo cheloveka Sibiri (Ornaments of the palæolithic people of Siberia). *Trudy Buriatskogo Kompleksnogo Nauchno-Issledovatel'skogo Instituta*, 8: 155–162. Ulan-Ude.—Brief discussion of the types of personal ornaments found in Siberian sites and their probable methods of use.

ALEKSANDROVA, L. P. *et al.*

1963 Novoe o razreze antropogenovykh otlozhenii gory Tologoi (New data on the section of Pleistocene deposits on Mount Tologoi). *Biulleten' Komissii po Izucheniiu Chetvertichnogo Perioda*, 28: 84–101. Moscow.

Palæontological and pollen data combine to provide the ecological history of the time span represented. The upper layer is judged to date from the first Siberian glaciation (Samarov or Maximal). The adjacent Oshurkovo palæolithic site is in the lowest of two terraces formed later than these deposits.

ALEKSEEV, V. P.

1963*a* Zaselenie IUzhnoi Sibiri chelovekom v svete dannykh paleoantropologii (The human occupation of southern Siberia in the light of palæoanthropological data). *Materialy i Issledovaniia po Arkheologii, Etnografii i Istorii Krasnoiarskogo Kraia*, pp. 5–10. Krasnoyarsk.

Argues (on the basis of the Afontova Gora II fragments) that the upper palæolithic population was Mongoloid and hence that the Siberian Palæolithic stemmed from Mongolia and China. During the Neolithic, Lake Baikal formed an ethnic frontier, with pure Mongoloids to the east (in Trans-Baikal) and a mixed European-Mongoloid population to the west on the Angara and upper Yenisei.

1963*b* Proiskhozhdenie khakasskogo naroda v svete dannykh antropologii (Origin of the Khakas nation in the light of anthropological data). *Ibid.*, pp. 135–164.⁓Includes a useful summary of the racial history of the Minusinsk Basin (pp. 154–161).

ANDREEV, G. I.

1963 Arkheologicheskie issledovaniia na iuzhnom i vostochnom poberezh'e Primor'ia v 1960 godu (Archæological investigations on the southern and eastern coast of the Maritime Territory in 1960). *Kratkie Soobshcheniia Instituta Arkheologii*, **93**: 106–113. Moscow.

Preliminary report of excavations at Sudzukhe, Pkhusun and Valentin bays, and a reconnaissance between this area and Vladivostok. Sudzukhe 3 is a stratified settlement (Zaisanovka and shell-mound cultures); Sudzukhe 4 a shell-mound site. A new neolithic complex was revealed at Pkhusun Bay with a core and blade technology.

ARUTIUNOV, S. A., M. G. LEVIN and D. A. SERGEEV

1963 Drevnie mogil'niki Chukotki (Ancient cemeteries of the Chukchi Peninsula). *Kratkie Soobshcheniia Instituta Etnografii*, **38**: 57–69. Moscow.

Summarizes preliminary results of the completed excavation (1957–1960) of the Uelen cemetery (primarily Old Bering Sea-Okvik) and of the first season at the Ekven cemetery (Old Bering Sea). English translation in *Arctic Anthropology*, **2**(1): 143–154.

ARUTIUNOV, S. A. and D. A. SERGEEV

1962 Drevneeskimosskie mogil'niki na Chukotke (Ancient Eskimo cemeteries on the Chukchi Peninsula). *Zapiski Chukotskogo Kraevedcheskogo Muzeia*, **3**: 13–20. Magadan.

Very brief summary of work at Uelen through 1960 followed by a description of the 1961 excavations at the Ekven cemetery, regarded as representing a local variant of the Old Bering Sea culture; 18 burials were opened. (See Arutiunov, Levin and Sergeev for a briefer treatment but more illustrations.)

ASTAKHOV, S. N.

1963 Pozdnepaleoliticheskaia stoianka u der. Fediaevo na Angare (A late palæolithic site at Fediaevo on the Angara). *Sovetskaia Arkheologiia*, 1963, **3**: 209–215. Moscow.

Describes 1959 excavations, faunal remains and 23 stone artifacts. The site, located 150 kilometres below Irkutsk, is considered to be later than Krasnyi IAr and probably a little older than the upper horizon at Mal'ta.

AVRAMENKO, G. A.

1963*a* Paleoliticheskaia stoianka u g. Achinska (A palæolithic site near Achinsk). *Materialy . . . Krasnoiarskogo Kraia*, pp. 21–26. Krasnoyarsk.

Preliminary report on 1960 investigation of a late palæolithic occupation area containing two hearths, extinct fauna, and bone and stone artifacts (especially burins). Typologically equated with Afontova Gora III, Kokorevo and Bugach.

1963*b* Gorodishche tashtykskoi epokhi u g. Achinska (*Gorodishche* of the Tashtyk period near Achinsk). *Ibid.*, pp. 105–111.⁓1956 investigation of two *gorodishche* (fortified sites) dated, on the basis of surface collections, to the Tashtyk period.

CHARD, CHESTER S.

1962 Maritime culture in the North Pacific: age and origin. *Akten des 34. Internationalen Amerikanistenkongresses, Wien, 1960:* 279–283. Vienna.

Presents the hypothesis that the maritime pattern of the North Pacific rim is an interrelated phenomenon originating in southwestern Alaska *c.* 2000 B.C. and spreading south to Japan and California and north into the American Arctic.

1963*a* The Old World roots: review and speculations. *Anthropological Papers of the University of Alaska*, **10**(2): 115–121. College.

Reviews recent discoveries and developments in Northeast Asian archæology that throw light on the problem of New World origins, and offers some new hypotheses suggested by the present picture. Supplants the author's 1959 paper on the subject in *Antiquity*.

1963*b* Soviet scholarship on the prehistory of Asiatic Russia. *Slavic Review*, **22**(3): 538–546. Seattle.⁓Briefly describes archæology in the USSR as a discipline—its nature, aims and organization—and cites some of the principal achievements to date in Soviet Asia and Mongolia.

1963*c* Check-stamped pottery in prehistoric Eurasia. In *A Pedro Bosch-Gimpera en el septuagesimo aniversario de su nacimiento*, pp. 95–101. Mexico City.⁓Describes its distribution in space and time. Concludes that there is close historical relationship between all these wares, indicating diffusion from a single source in north-central China.

CHLENOVA, N. L.

1961 Mesto kul'tury Tuvy skifskogo vremeni riadu drugikh 'skifskikh' kul'tur Evrazii (The position of the Scythian period culture of Tuva among the other 'Scythian' cultures of Eurasia). *Uchenye Zapiski, Tuvinskii Nauchno-Issledovatel' skii Institut IAzyka, Literatury i Istorii*, 9: 133–155. Kyzyl.

The Scythian period sites in Tuva are better known than those of any other period. It can definitely be demonstrated that Tuva at this time formed part of the 'Scythian world' along with such cultures as the Tagar, Maiemir, Bol'sherechensk, Saka, etc. in other regions of Inner Asia.

1963 Pamiatniki perekhodnogo karasuk-tagarskogo vremeni v Minusinskoi kotlovine (Sites of the transitional Karasuk-Tagar period in the Minusinsk Basin). *Sovetskaia Arkheologiia*, 1963, 3: 48–60. Moscow.

A contribution to the badly-neglected problem of Tagar origins, one approach being through the study of transitional sites. The author identifies the Andronovo culture as the major component in Tagar, with the Lugavskaia culture next. Karasuk contributed very little.

DIKOV, N. N.

1958 Predvaritel'nye dannye o rabote arkheologicheskoi ekspeditsii Chukotskogo Kraevedcheskogo Muzeia v 1958 godu (Preliminary data on the work of the archæological expedition from the Chukotka Regional Museum in 1958). *Kraevedcheskie Zapiski*, 2: 89–93. Magadan.⌐Very brief summary of work at the neolithic sites of Vakernaia, Chikaevo, and Ust'-Belaia, and in the Uelen cemetery.

1961*a* Pervaia arkheologicheskaia kollektsiia iz vnytrikontinental'noi Chukotki (The first archæological collection from the interior of the Chukchi Peninsula). *Zapiski Chukotskogo Kraevedcheskogo Muzeia*, 2: 3–10. Magadan.⌐See Dikov 1963.

1961*b* O raskopkakh Ust'-Bel'skogo mogil'nika po dannym 1958 goda (1958 excavations in the Ust'-Belaia cemetery). *Ibid.:* 10–14.⌐See Dikov 1963.

1961*c* Predvaritel'nye dannye ob arkheologicheskikh rabotakh na Chukotke v 1959 godu (Preliminary data on 1959 archæological work in the Chukchi Peninsula). *Ibid.:* 21–36.

In 1959 the Anadyr Museum completed excavation of the Ust'-Belaia cemetery and also worked at Lake Chirovoe (neolithic), later sites on the lower Anadyr, and a maritime culture site on the north shore of the Gulf of Anadyr.

1961*d* Pervye arkheologicheskie issledovaniia na ostrove Aion (The first archæological investigations on Aion Island). *Ibid.:* 38–42.

1959 field work by the Anadyr Museum located 5 sites of the continental neolithic (*c.* 1000 B.C.). Along with the sites on the Amguema and Yakitikiveem rivers, these represent a tundra culture closely related to that of northern Yakutia and differing in some respects from Ust'-Belaia and contemporary sites on the Anadyr. The culture at the latter shows some Eskimoid traits and is confined to the scrub tundra of extreme northeastern Siberia; it represents the westernmost extension of the Proto-Eskimo culture of the American Arctic, and here may be considered as Proto-Chukchi. The Aion-Amguema sites represent the easternmost extension of the tundra culture of northern Asia. In addition to these cultural influences from east and west, southern elements also reached the Anadyr from the Okhotsk coast and even the Vladivostok area.

1963 Archæological materials from the Chukchi Peninsula. *American Antiquity*, 28(4): 529–536. Salt Lake City.

Part 1 describes the first collection from the area made in 1904–1907 and representing two different cultures and time periods—neolithic and 7th-8th centuries A.D. Part 2 describes the 1958 excavations by the Anadyr Museum at the Ust'-Belaia neolithic cemetery, from which a radiocarbon date of 2,860 years was obtained. The culture here has been declared identical with the Norton culture of Alaska by James B. Griffin.

ERMOLOVA, N. M.

1963 O faune mlekopitaiushchikh epokhi paleolita i neolita Pribaikal'ia (The mammalian fauna of the palæolithic and neolithic periods in Cis-Baikal). *Materialy po Etnografii*, 3: 27–64. Leningrad.

Based on study of more than 10,000 bones from Angara sites of various periods recovered by the Bratsk Archæological Expedition, plus collections in the various institutions in Irkutsk. The author makes inferences as to changing environment and dating of sites (e.g. Krasnyi IAr is postglacial).

FAIRSERVIS, W. A. JR.

1963 American Museum of Natural History archæological researches in Mongolia. *The Mongolia Society Newsletter*, 2(1): 11–15. Bloomington.⌐Brief summary of results of Nelson's 1925 field work and subsequent study of his collections by the author.

GABORI, MIKLOS

1962*a* Beiträge zur Typologie und Verbreitung der Shabarakh-Kultur. *Acta Archæologica Academiæ Scientiarum Hungaricæ*, **14**: 159–174. Budapest.⌐Comprehensive discussion of implement types and of the occurrences of the culture elsewhere in Mongolia as shown by recent field work.

1962*b* Beiträge zur Steinzeit der Mongolei. *Mitteilungen der Anthropologischen Gesellschaft in Wien*, XCII: 136–148. Vienna.⌐Regional survey of sites and materials (palæolithic, mesolithic, neolithic) and discussion of major problems.

1963*a* Gisements et industries de l'âge de la pierre en Mongolie. *Acta Archæologica Academiæ Scientiarum Hungaricæ*, **15**: 11–32. Budapest.

1963*b* New Data on palæolithic finds in Mongolia (tr. from the French by B.P. Merbs), *AP*, **7**: 105–112, map. Hong Kong University Press.

Correlates the lithic industries of Mongolia with those in neighbouring areas. Recent finds by A. P. Okladnikov are emphasized. Lists 4 lower palæolithic, 15 upper palæolithic, 6 mesolithic and 39 neolithic sites. Their distribution indicates a richer ecological situation during Stone Age times than is found today.

GITERMAN, R. E.

1963 Etapy razvitiia chetvertichnoi rastitel'nosti IAkutii i ikh znachenie dlia stratigrafii (Stages of development of the Quaternary vegetation of Yakutia and their significance for stratigraphy). *Trudy Geologicheskogo Instituta*, **78**. 192 pp., 12 plates, 65 figs, 66 tables. Moscow.⌐A major comprehensive work based on recent pollen studies.

GLUSSKAIA, Z. K.

1963*a* Zhenshchina negroidnogo tipa v neolite pod Krasnoiarskom (A neolithic female of negroid type near Krasnoyarsk). *Materialy . . . Krasnoiarskogo Kraia*, pp. 29–37.

Detailed description of a burial discovered in 1955 with associated artifacts. The cranium is considered by V. P. Alekseev to fall within the Negroid group. The facial features have been reconstructed by Gerasimov (illustration). The links between the local Afanasievo culture and the Aral Sea region are cited as a possible explanation.

1963*b* Novoe v iskusstve neolita na Enisee (New data on neolithic art on the Yenisei). *Ibid.*, pp. 39–48.

A group burial found in 1955 with fragmentary remains of at least 5 adults and 2 children, and typologically neolithic stone and bone artifacts, is noteworthy for the ornaments and the bone pendants with relief carvings of animals, birds and fish.

GOKHMAN, I. I.

1961 Drevnii cherep s Chukotki (An ancient cranium from the Chukchi Peninsula). *Zapiski Chukotskogo Kraevedcheskogo Muzeia*, **2**: 14–18. Magadan.

From the Ust'-Belaia cemetery (*c.* 900 B.C.) on the Anadyr. It is concluded to represent a mixed population combining the Baikal and Arctic types of Mongoloid, the result of ancient mixture between ancestral Yukagir and ancestral Eskimo, confirming M. G. Levin's hypothesis that such must have occurred to produce the type of the modern Reindeer Chukchi, which is not the result of any recent mixture. (See Lebedinskaia 1961).

1963 Paleoantropologicheskie materialy iz mogil'nika Ust'-Tal'kin v Pribaikal'e (Palæoanthropological materials from the Ust'-Tal'kin cemetery in Cis-Baikal.) *Sbornik Muzeia Antropologii i Etnografiii*, **21**: 338–359. Leningrad.

Data on 18 male and 12 female crania excavated in 1959 and assigned to the 12th-14th centuries. Considered to represent the initial stages of the formation of the physical type of the modern Buryat.

JETTMAR, KARL

1962 Die Aussage der Archäologie zur Religionsgeschichte Nordeurasiens, in *Die Religionen Nordeurasiens und der amerikanischen Arktis*, pp. 305–356. W. Kohlhammer Verlag, Stuttgart.⌐Citation and discussion of the available archæological data reflecting prehistoric religious practices and concepts. Northeast Asia is specifically treated on pp. 324–346.

KALININ, A. A.

1961 Chaun-Chukotka zhdet arkheologov (Chaun-Chukotka awaits archæologists). *Zapiski Chukotskogo Kraevedcheskogo Muzeia*, **2**: 37–38. Magadan.⌐Reports location of a site of the continental neolithic on the Ryveem River, Aion Island in Chaun Gulf, discovered by geologists.

KARTSOV, V. G.

1961 O chem govoriat kurgany Eniseia (What the kurgans of the Yenisei have to tell). 98 pp. Khakasskoe Knizhnoe Izd-vo, Abakan.⌐Popular account of the prehistory of the Khakas territory from palæolithic times to the Khakas state, based on the standard sources.

Khlobystin, L. P.

1963 K istorii nerpich'ego promysla na Baikale (Contribution to the history of seal hunting on Lake Baikal). *Sovetskaia Arkheologiia*, 1963, **1:** 12–19. Moscow.⌒1959 investigation of remains of summer sealing camps of Glazkovo and iron-age times on the Ushkan'i Islands in the central section of the lake.

Khoroshikh, P. P.

1962 Tysiacheletnie pamiatniki doliny reki Barguzin (Millennial remains in the valley of the Barguzin River). *Trudy Buriatskogo Kompleksnogo Nauchno-Issledovatel'skogo Instituta*, **8:** 163–164. Ulan-Ude.⌒Very brief notes on survey which located neolithic and iron-age sites.

Kiselev, S. V.

1963 K izucheniiu minusinskikh kamennykh izvaianii (Contribution to the study of the Minusinsk stone monuments). *Istoriko-Arkheologicheskii Sbornik*, pp. 53–61. Moscow. ⌒History of study and present state of knowledge regarding the stelæ of this area.

Komarova, M. N.

1962 Otnositel'naia khronologiia pamiatnikov andronovskoi kul'tury (Relative chronology of the sites of the Andronovo culture). *Arkheologicheskii Sbornik*, **5:** 50–75. Leningrad. ⌒Important study based on the extensive collections in the Hermitage from 30 sites, including five on the upper Yenisei.

Konovalov, P. B.

1961 Arkheologicheskie pamiatniki v doline reki Khilok (Archæological sites in the Khilok river valley). *Etnograficheskii Sbornik*, **2:** 144–147. Ulan-Ude.⌒Notes on 1960 reconnaissance in Bichursk district. An upper palæolithic site, slab graves and petroglyphs (Bronze Age?) were recorded.

Kyzlasov, L. R.

1963*a* Pamiatnik musul'manskogo srednevekov'ia v Tuve (A medieval Muslim site in Tuva). *Sovetskaia Arkheologiia*, 1963, **2:** 203–210. Moscow.

Unpublished data from Teploukhov's 1926 investigations in the cemetery at Saadak-Terek on the right bank of the Kemchik River 15 km below the mouth of the Barlyk, which represents the northernmost Muslim penetration by 13th-14th century merchants.

1963*b* Nachalo sibirskoi arkheologii (The beginning of Siberian archæology). *Istoriko-Arkheologicheskii Sbornik*, pp. 43–52. Moscow.⌒Historical sketch. Earliest notices of Siberian archæological remains, which led to Peter's edicts and Messerschmidt's archæological expedition, also described.

Larichev, V. E.

1963 Otkrytie nizhnego paleolita v Tsentral'noi Azii (Discovery of the Lower Palæolithic in Inner Asia). *Vestnik Akademii Nauk SSSR*, 1963, **4:** 89–94. Moscow.

Brief report on the discovery in 1960–62 by the Soviet-Mongolian Archæological Expedition under A. P. Okladnikov of the first four lower palæolithic sites known in Mongolia. Surface collections of artifacts of classic western Lower Palæolithic appearance, which the author dates from possibly Acheulean times through the Mousterian, were made in the southern and southwestern Gobi at Ottson-Man't, Ikh-Bogdo, Bogdo-Somon and at the foot of the Arts-Bogdo Range. The author visualizes the Gobi and the Gobi Altai as the route along which a western population moved into Mongolia and northern China in the Lower Palæolithic. Subsequent upper palæolithic cultures in Mongolia show much closer connections with the chopper/chopping-tool cultures of eastern and southeastern Asia than does the preceding Lower Palæolithic.

Lavrushin, Iu. A., *et al.*

1963 Absoliutnaia khronologiia sobitii golotsena Severo-Vostoka SSSR (Absolute chronology of Holocene events in the northeast of the USSR). *Biulleten' Komissii po Izucheniiu Chetvertichnogo Perioda*, **28:** 112–126. Moscow.⌒The main subdivisions are found to coincide with Alaska and North Europe.

Lebedinskaia, G. V.

1961 Protsess vosstanovleniia golovy po cherepu iz Ust'-Bel'skogo mogil'nika (The process of reconstructing the head on the cranium from the Ust'-Belaia cemetery). *Zapiski Chukotskogo Kraevedcheskogo Muzeia*, **2:** 18–21. Magadan.⌒See Gokhman 1961. Restoration of features illustrated.

Levasheva, V. P.

1963 Afanas'evskii mogil'nik Krasnyi IAr v Khakasii (The Afanasievo cemetery of Krasnyi IAr in Khakas oblast). *Istoriko-Arkheologicheskii Sbornik*, pp. 62–73. Moscow.⌒Report on 12 kurgans excavated by the author in 1930.

LEVIN, M. G.

1963 Ob antropologicheskikh materialakh iz drevneeskimosskikh mogil'nikov (The osteological materials from the ancient Eskimo cemeteries). *Zapiski Chukotskogo Kraevedcheskogo Muzeia*, Vyp. 3: 25–26. Magadan.↩Brief statement on the significance of the skeletal materials from the Uelen and Ekven cemeteries. (See Arutiunov, Levin and Sergeev 1963.)

LIPSKII, A. N.

1963*a* IAmka-kladovochka kostenkovskogo tipa na r. Abakane (A cache of *kostenki* type on the Abakan River). *Materialy . . . Krasnoiarskogo Kraia*, pp. 11–20. Krasnoyarsk.

1958 investigation of the first *in situ* palæolithic find in the Minusinsk Basin—an eroded site of which two hearths and an underground cache remained. The cache was covered with stone slabs and contained typologically late palæolithic bone and stone artifacts.

1963*b* Afanas'evskoe v karasukskoi epokhe i karasukskoe u Khakasov (The Afanasievo heritage in Karasuk and the Karasuk heritage among the Khakas). *Ibid.*, pp. 57–89.

The Fedorovo cemetery at the headwaters of the Abakan River, originally published as Afanasievo, is now demonstrated to be Karasuk, with certain features that indicate genetic relationship of at least some part of the Karasuk population with an Afanasievo ancestry.

MANNAI-OOL, M. KH.

1961 Arkheologicheskie issledovaniia v Oviurskom paione v 1960 g. (Archæological investigations in Oviursk district in 1960). *Uchenye Zapiski, Tuvinskii Nauchno-Issledovatel'nyi Institut IAzyka, Literatury i Istorii*, 9: 222–229. Kyzyl.↩1960 survey and investigation of kurgans and stelæ in one of the least known districts of Tuva.

MARINGER, JOHANNES

1963 Mongolia before the Mongols. *Arctic Anthropology*, 1(2): 75–85. Madison.↩Summarizes research and knowledge on the prehistory of Mongolia as of *c.* 1956.

NIKOLAEVA, I. B.

1963 Raskopki na territorii byvshego Krasnoiarskogo ostroga (Excavations on the site of the former Krasnoyarsk fort). *Materialy ... Krasnoiarskogo Kraia*, pp. 115–123. Krasnoyarsk. ↩Brief account of 1958 dig on the site of the 17th-18th century Russian fort. Also find of a native burial of the 16th-17th century northwest of the city.

NIKOLAEV, R. V.

1963*a* Drevnie Zhilishcha u sela Makovskogo (Ancient dwellings at Makovskoe). *Ibid.*, pp. 49–53.↩Description of three pit dwellings west of Eniseisk, assigned to the Neolithic or early Bronze Age on the basis of associated pottery and artifacts.

1963*b* Kurgany tagarskoi epokhi u g. Krasnoiarska (Kurgans of the Tagar period near Krasnoyarsk). *Ibid.*, pp. 93–101.↩1956 excavation of four kurgans in vicinity of Krasnoyarsk and discussion of the significance of the finds.

1963*c* Materialy k arkheologicheskoi karte severa Krasnoiarskogo kraia (Materials toward an archæological map of northern Krasnoyarsk Territory). *Ibid.*, pp. 127–131.↩Brief notes on 1958 survey in Turukhansk district and at the mouth of the Pokdamennaia Tunguska River.

Novye metody v arkheologicheskikh issledovaniiakh

1963 (New methods in archæological research). Izd-vo Akademii Nauk SSSR, Moscow-Leningrad, 1963.↩Includes papers on chemical analysis of Minusinsk metal objects, techniques of metallurgy and functional studies of stone implements.

OKLADNIKOV, A. P.

1961 O nachale zemledeliia za Baikalom i v Mongolii (On the beginning of agriculture in Trans-Baikal and Mongolia). In *Sbornik Statei v Chest' IUbileia akademika V. V. Struve*, pp. 418–431. Moscow-Leningrad.

After reviewing the available archæological evidence, the author concludes that actual plough agriculture goes back to the Neolithic in the region from Mongolia and adjacent Trans-Baikal to North Korea.

1962*a* The temperate zone of Continental Asia, in *Courses Toward Urban Life*, edited by R. J. Braidwood and G. R. Willey (Viking Fund Publication No. 32), pp. 267–287. Chicago. ↩A comprehensive and up-to-date summary of the Palæolithic and Neolithic of the forest zone of Siberia as viewed by a leading authority.

1962*b* Paleoliticheskie nakhodki v raione ozera Orok-nor (Palæolithic finds in the region of Lake Orok-Nor). *Trudy Buriatskogo Kompleksnogo Nauchno-Issledovatel'skogo Instituta*, 8: 169–175. Ulan-Ude.

Extensive surface site in the Gobi Altai: the westernmost palæolithic site in Mongolia at present and one of the most important. The inventory shows great similarity to the Siberian Palæolithic in the author's opinion. The artifact types are predominantly pebble choppers or chopperlike cores, characteristic of the late Palæolithic of Mongolia; but here there are also *skreblo* and, in one section, cores of Levallois appearance.

1963*a* The introduction of iron in the Soviet Arctic and Far East. *Folk*, **5**: 249–255. Copenhagen.

Describes the occurrences of prehistoric iron in eastern Siberia. Iron metallurgy appeared in the Vladivostok area early in the first millennium B.C. (Shell-mound culture). Perhaps this was the source of the iron objects in the Lena Valley and in extreme northeastern Siberia.

1963*b* The history of fishery in North-Asia. Neolithic spoon-bait on the Amur River. *Folk*, **5**: 256–258. Copenhagen.

Several objects recently found on the Amur are considered to be spoon-bait—the first evidence of prehistoric fishing equipment in this great fishing region. Methods here were distinctively different from those used in the Baikal region.

1963*c* Znachenie rabot L. IA. Shternberga dlia arkheologii Dal'nego Vostoka (The significance of L. IA. Sternberg's work for the archæology of the Soviet Far East). *Trudy Instituta Etnografii*, **85**: 259–267. Moscow.

Sternberg's ethnographic work provides valuable data for reconstructing past life. He also posed and examined a number of the major historical and enthnogenetic problems.

1963*d* Drevnee poselenie na poluostrove Peschanom u Vladivostoka (An ancient settlement on the Peschanyi Peninsula near Vladivostok). *Materialy i Issledovaniia po Arkheologii SSSR*, **112**. 354 pp., 142 plates, 76 figs, tables. Moscow-Leningrad.⁓Final excavation report on 1956 and 1960 field work at this site of the shell-mound culture.

Okladnikov, A. P. and V. E. Larichev

1963 Arkheologicheskie issledovaniia v Mongolii v 1961–1962 gg. (Archaeological investigations in Mongolia in 1961–1962). *Izvestiia Sibirskogo Otdeleniia Akademii Nauk SSSR, Seriia Obshchestvennykh Nauk*, **1**(1): 78–89. Novosibirsk.⁓Summarized in the Fieldwork section of the present report.

Paraketsov, K. V.

1961 Chetvertichnye otlozheniia raiona Chaunskoi guby (Quaternary deposits of the Chaun Gulf region). *Zapiski Chukotskogo Kraevedcheskogo Muzeia*, **2**: 45–59. Magadan.⁓Comprehensive summary of the Quaternary geology of the area as known at present.

Petrov, U. M.

1963 Stratigrafiia chetvertichnykh otlozhenii iuzhnoi i vostochnoi chastei Chukotskogo poluostrova (Stratigraphy of the Quaternary deposits of the southern and eastern parts of the Chukchi Peninsula). *Biulleten' Komissii po Izucheniiu Chetvertichnogo Perioda*, **28**: 135–152. Moscow.⁓A new scheme using faunal, pollen and diatom data, based on author's 1953–1958 field work on Bering Sea coast.

Poltoratskaia, V. N.

1962 Znaki na predmetakh iz kurganov epokhi rannykh kochevnikov v gornom Altae (Signs on objects from kurgans of the early nomad period in the High Altai). *Arkheologicheskii Sbornik*, **5**: 76–90. Leningrad.

Examples from Tuekta, Shibe, Pazyryk and Bashadar. Possibly a means of recording certain types of quantitative information in the absence of writing?

Pytliakov, G. A. and A. V. Beliaeva

1957 Arkheologicheskie raboty na okhotskom poberezh'e (Archæological work on the Okhotsk coast). *Kraevedcheskie Zapiski*, **1**: 5–11. Magadan.

Brief preliminary notice of 1955–1956 survey in the Ol'skii district east of Magadan. 79 settlements were located with a total of 207 pit houses, and 3 cemeteries with 34 burials in all.

Stratigrafiia chetvertichnykh otlozhenii i noveishaia geologicheskaia istoriia Altaia.

1963 (Stratigraphy of the Quaternary deposits and most recent geological history of the Altai). *Trudy Komissii po Izucheniiu Chetvertichnogo Perioda*, **22**: 190 pp. Moscow. ⁓Collection of papers reflecting work of recent years.

Sunchugashev, IA. I.

1961 Drevnie gornye vyrabotki v Khobu-Aksy (Ancient mine workings in Khobu-Aksy). *Uchenye Zapiski, Tuvinskii Nauchno-Issledovatel'skii Institut IAzyka, Literatury i Istorii*, **9**: 230–234. Kyzyl.⁓1959 reconnaissance of ancient copper workings on the northern slope of the Tannu-Ola Range.

Toth, T.

1963 Palæoanthropological finds from the Hudjirte Valley (Noin-Ula, Mongolia). *Acta Archæologica*, **14**(3–4): 250–253. Budapest.⁓Describes two crania of the Hun period.

TUGOLUKOV, V.

1963 Dzheltulakskie pisanitsy (The Dzheltulak petroglyphs). *Kratkie Soobshcheniia Instituta Etnografii*, **38**: 82–89. Moscow.⌐Description, discussion and comparative notes on petroglyphs discovered in Dzheltulak district of the Amur oblast. Attributed to Tungus of past centuries.

VASIL'EVSKII, R. S.

1959 Itogi polevykh arkheologicheskikh issledovanii, proizvédennykh na okhotskom poberezh'e v 1958 godu (Results of archæological investigations carried out on the Okhotsk coast in 1958). *Kraevedcheskie Zapiski*, **2**: 28–56. Magadan.⌐Archaeological reconnaissance in the vininity of Yamsk and on the north coast of the P'iagina Peninsula. Describes sites examined, work done and finds recovered.

1960 Arkheologicheskie materialy poseleniia Atargan (Archæological materials from the Atargan settlement). *Kraevedcheskie Zapiski*, **3**: 60–61. Magadan.⌐1959 excavations at the largest prehistoric settlement known on the Okhotsk coast. Considered to represent ancestral Koryak, *c.* 1000 A.D. Evidence of use of iron.

1962 Nakhodka metalla v poselenii Atargan okhotskogo poberezh'ia (A find of metal in the Atargan settlement on the Okhotsk coast). *Kraevedcheskie Zapiski*, **4**: 141–146. Magadan. ⌐Describes the two iron artifacts found and discusses the use of iron in pre-contact times in northeastern Siberia.

VAS'KOVSKII, A. P.

1962 Kartograficheskaia skhema antropogennogo oledeniia na krainem Severo-Vostoke SSSR (A cartographic scheme of the Pleistocene glaciations in the extreme northeast of the USSR). *Kraevdecheskie Zapiski*, **4**: 206–208. Magadan.

Map of the extent of Pleistocene glaciation, which invaded lowlands only in the Anadyr Valley. However, a corridor always remained open between the northern and southern glaciers of the Chukchi Peninsula.

1963 Ocherk stratigrafii antropogennovykh (chetvertichnykh) otlozhenii krainego Severo-Vostoka Azii (Outline of the stratigraphy of the Pleistocene [Quaternary] deposits in the extreme northeast of Asia). In *Geologiia Koriakskogo Nagor'ia*, edited by B. KH. Egiazarov, pp. 143–168. Moscow.

Up-to-date summary based on latest field work. Contains data on climate, fauna and vegetation. The Würm glaciations were restricted to mountain areas, leaving an open corridor in the Anadyr Valley 50–70 kilometres wide. Article is followed by a map of glaciations.

VAS'KOVSKII, A. P. and G. G. KARTASHOVA

1961 Priroda vokrug Ust'-Bel'skogo cheloveka (The natural environment of the Ust'-Belaia man). *Zapiski Chukotskogo Kraevedcheskogo Muzeia*, **2**: 43–45. Magadan.⌐Pollen analysis of soil samples from the burial indicates conditions like the present day.

VTIURIN, V. I.

1961 K istorii drevnego oledeneniia i razvitiia mnogoletnemerzlykh porod v doline reki Kanchalan (Contribution to the history of the ancient glaciation and development of permafrost in the valley of the Kanchalan River). *Zapiski Chukotskogo Kraevedcheskogo Muzeia*, **2**: 62–65. Magadan.⌐Author established the extent and history of the last glaciation of this portion of the Anadyr Basin.

YOSHIZAKI, MASAKAZU

1963 Prehistoric culture in southern Sakhalin in the light of Japanese research. *Arctic Anthropology*, **1**(2): 131–158. Madison.⌐Sketches history of research by Japanese scholars, lists and describes sites discovered by them, and discusses the cultural sequence, chronology and some of the principal problems involved.

ZAMOTORIN, I. M.

1963 O vozmozhnosti ustanovleniia otnositel'nykh datirovok territorial'no udalennyhk sooruzhenii metodom analiza drevesnykh stvolov v usloviiakh Gornogo Altaia(Concerning the possibility of establishing relative dating of territorially distant structures by dendrochronology under conditions prevailing in the High Altai). *Sovetskaia Arkheologiia*, 1963, **2**: 131–138. Moscow.

Although the technique has been applied previously in comparing the age of the adjacent Pazyryk kurgans, dating between more distant regions runs into climatic and other factors. Author demonstrates successful transfer from Pazyryk to Tuekta kurgan 150 kilometres away.

ZHUROV, R. IA. and D. A. SERGEEV

1963 Drevnie skul'pturnye izobrazheniia kitov (Ancient carved figures of whales). *Zapiski Chukotskogo Kraevedcheskogo Muzeia*, **3**: 21–24. Magadan.

1961 finds in a cache near Seshan on the shore of the Chukchi Sea (outside recent Eskimo territory) resemble amulets used in whale ceremonial. 4 whales and 2 ducks made of wood, with traces of graphite.

3

Korea

KIM WON-YONG

Received 29 March 1964

FIELD WORK

1963

March: The National Museum excavated six dolmens in Kige area near Kyongju in southeastern Korea as a part of its long-range research project on Korean dolmens.

April: The Department of Archæology and Anthropology, Seoul National University, excavated part of an early Iron Age jar-coffin cemetery located at the foot of a low hill in Pia, southwestern Korea. The excavated area, 4 metres by 24 metres, revealed a total of 54 jar coffins buried side by side at a depth of only 30 to 40 centimetres. The coffins, consisting of two small jars put together mouth to mouth, are for the most part only 60 to 70 centimetres long, and probably for infants and children. Few have escaped destruction by recent ploughing; the intact ones contained no skeletal remains but only a fine clay. A few scraps of iron and small pots were the only burial gifts discovered. A stone axe, a slate arrowhead and a pommel ornament of a bronze dagger were picked up on the surface. Similar children's jar-coffin cemeteries of the Yayoi Period have been reported in Japan.

June: The National Museum excavated a partially preserved kiln site of the 15th century A.D. in Kwangju, southwestern Korea. It is the first important kiln site to be excavated by the Museum since 1945. A vast number of sherds dating from the late Koryo (918–1392) and the early Yi (1392–1590) periods were collected; they were celadon ware with inlay designs in underglaze iron.

The Municipal Museum of Inch'on excavated a northern-type dolmen located on a small hill near the seashore on Yongchongdo Island off the west coast. Its wall stones were erected on a layer of charcoal, a sample of which has been sent to the University of Michigan for carbon dating.

October: The National Museum excavated a group of dolmens located on mountain slopes in Kwangwado Island off the west coast—they are smaller in size than the dolmens found in the plain. The entire structure was buried by earth except for the cap stones. The data accumulated so far suggest that the nature and structure of Korean dolmens are more complicated than we had thought.

The Department of History of Ewha Women's University, Seoul, conducted an excavation of a tomb mound dating from the Old Silla Period (5th–6th century A.D.) located on a hill top in the vicinity of Andong, southeastern Korea. In the steep

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mound, some 6 metres high, were two stone chambers containing a small jar coffin. The object of the excavation was to study the burial system of the local gentry living far from the capital of the kingdom. Historic jar coffins from southwestern Korea (the territory of the Paikche dynasty), have been reported but their existence in southeastern Korea (Silla area) was discovered here for the first time.

Two prehistoric pit-house sites in central Korea, one in Ch'onan and another in Karak-ri, were excavated by the National Museum and the Korea University, Seoul during October. The pottery resembles certain south Manchurian and Japanese potteries of the early Iron Age. The excavator has named this type Karak pottery (*see* bibliography: Kim Jong-hak, 1963).

The archaeological team from the University of Wisconsin is continuing to survey and collect samples in south Korea's prehistoric sites for the second consecutive year.

November: A tomb mound with a rectangular stone chamber decorated with mural paintings was discovered in Koryong, southeastern Korea. The plastered walls, painted with lotus flowers and cloud designs in red, green and brown, have been badly damaged by natural causes and by robbers who used smoking torches to light the chamber. Most tombs with mural paintings are found in northwestern Korea around P'yong-yang, but two stray finds have been reported from southwestern Korea. This was the first similar tomb to be discovered in southeastern Korea, except for an unconfirmed report from Kyongju area in the 1930's (C. Saitō, *Chōsen Kodai no Bunka* (Ancient Culture of Korea), Tokyo, 1953, pp. 146–147 and footnote 13). The discovery shows an infiltration of the Koguryo burial system into the Paikche and thence to the Silla regions.

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KIM CHEWON and YOUN MOO-BYONG

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KIM JONG-HAK

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KIM WON-YONG

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The final report of the archæology of Ullungdo based upon a series of field surveys conducted from 1947 to 1963 by the author, sometimes assisted by staff of the Museum. In the report is a description of Tomb No. 7 at Naidongri, southwestern Korea, a Paikche jar-coffin tomb excavated in October 1960.

1963*b* *Ch'un-ch'ŏn Kyo-dong Hyolko Yujŏk kwa Yumul* (A prehistoric cave dwelling site at Kyodong, Ch'unch'ŏn, central Korea). *Yŏksa Hakpo* (Korean Historical Review), **20**: 1–27.

1963*c* *Yŏng-am-gun Wŏlssongri eui sŏkki munhwa* (The stone industry of Wŏlssongri, southwest Korea), *Chin-tan Hakpo* (Journal of the Chin-tan Society) **24**: 131–140. Seoul.

1963*d* *Kimhai Mugeri chisŏkmyo eui ch'ult'o-p'um* (Relics from a dolmen at Mugeri, Kimhai), *Tong-a Mun-hwa* (Journal of the Intitute of Asian Studies, Seoul National University) **1**: 139–158.

1963*e* *Honam sŏnsa kogohak eui isam munje* (Problems in the prehistoric archæology of Honam area). *Honam Munhwa Yongu* (Journal of the Institute of Honam Area Studies, Chonnam University) **1**: 1–13. Kwangju.—Honam is a popular name for Southwestern Korea as a whole.

KIM YONG-KAN

1963 *Misongri yujŏk eui kogohak-chŏk wich'i* (Archaeological position of the cave site of Misongri) (Korean text in a Japanese journal), *Chōsen Gakuhō* (Journal of the Academic Association of Koreanology in Japan) **26**: 199–222. Tenri.

The chronology and nature of the cave site at the mouth of Yalu River where two superimposed layers of different cultures separated by a sterile mud layer were found in 1959. Both cultures, dating from the second and the third millenia B.C., show strong affinities to northern (Mongolian) prehistoric culture.

YI EUN-CH'ANG

1963 *Sŏsan Taisanri ch'ult'o sŏk-ch'ok* (Stone arrowheads from Taisanri, Sŏsan), *Komunhwa* (Korean Antiquity) **2**: 36–41.

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Japan

ERIKA KANEKO

Received May 1964

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EDITORIAL NOTE

About two years ago the problem of how to report on archæological work done in Japan prompted us to make arrangements for the translation of *Archæologia Japonica,* the Annual Report of the Japanese Archæologists Association. We planned a summary of work accomplished, condensations of the reports (to be done by their authors), and an extensive bibliography. Though all the necessary steps had been taken for financing the translation, the project fell through, because of a large cut in the Association's budget.

The present report is the result of several compromises between our original plan and a return to the earlier reports which covered only a fraction of a year's research in Japan. It was made possible thanks to the Wenner-Gren Foundation for Anthropological Research, which gave us $600 to help translate and publish a much longer and better illustrated paper than would otherwise be possible.

As Dr Erika Kaneko, who was to have been in charge of the entire translation of *Archæologia Japonica,* had done these translations, Dr Yawata asked her to present the report for this issue. Its coverage is limited to the Yayoi and Burial-mound Periods but these it considers in some depth, with reference to articles in *Archæologia Japonica* over several years. In later reports we hope to cover pre-Jōmon and some aspects of Jōmon in a similar way and possibly some special foci of the Burial-mound Period. To a considerable degree the report is more than just a summary of a year's archæological research. Material is being selected, brought together, integrated, and to some extent interpreted, and the result may be considered original work.

1. INTRODUCTION

While selecting field reports from *AJ* we felt that unless they were set against a general frame of reference they would not be very meaningful. Hence this introduction gives a summary of what is known about the Yayoi and Burial-mound Periods,

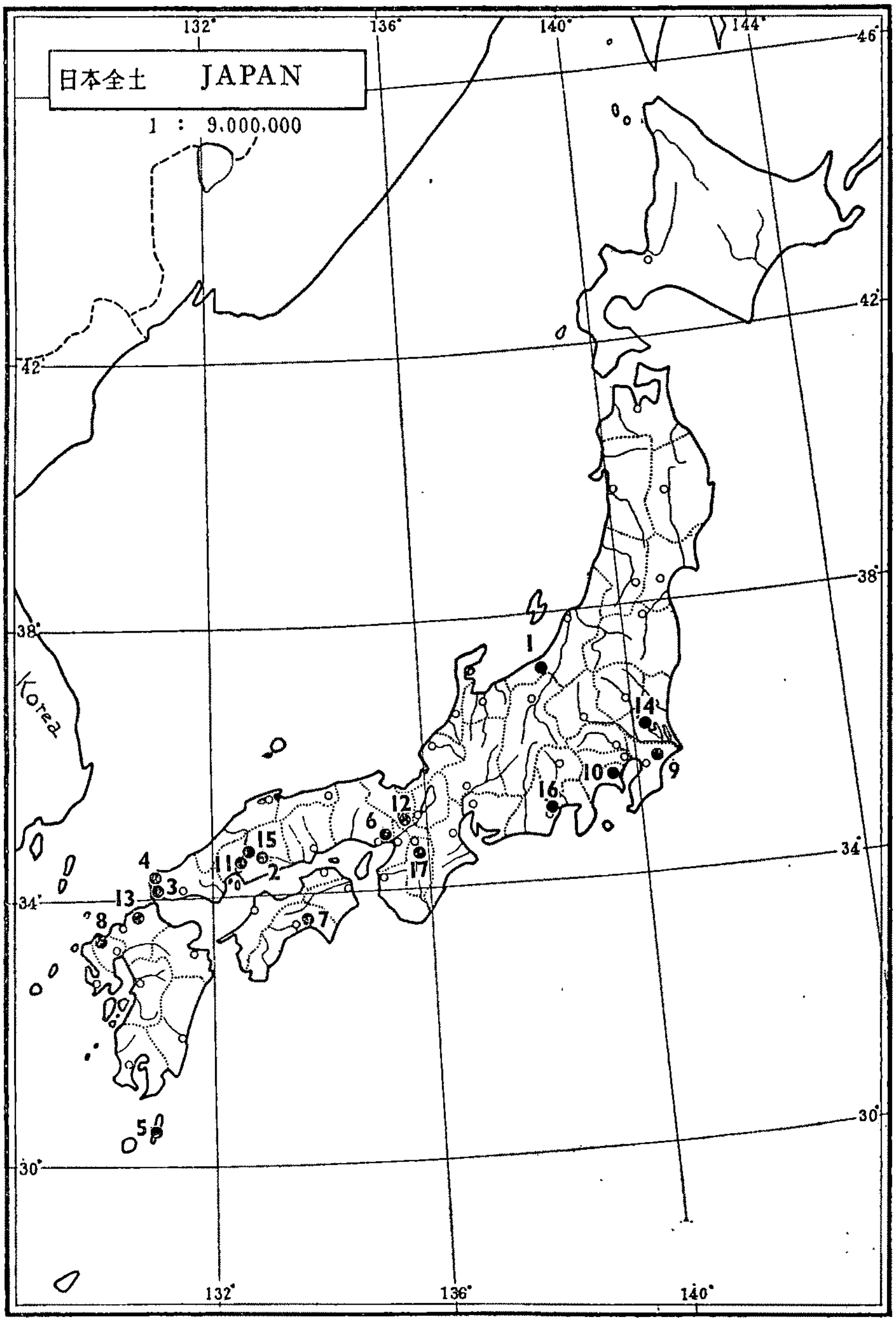

FIG. 1. Sites numbered in the order of their appearance in the text of this paper.

reduced to essentials. It is greatly deficient in parts and tentative as far as translation of the Japanese terminology is concerned. The typology and terminology of metal implements are deferred to a later issue. Problems of archæological terminology and the Japanese approach to terminology are dealt with indirectly and the inclusion of Chinese characters, other than site names, may help students who do not easily read Japanese, and yet try to use Japanese publications. A technical term is usually provided with a Chinese character when it first occurs in the text and the character is repeated only in specially significant contexts. Japanese romanized readings of the Chinese characters are not provided, since we hope at some future date to publish a co-operative article with parallel readings and related terms in Japanese, Chinese, Korean and English. In some cases descriptive denominations have not been literally translated from the Japanese, but replaced by a comparable, descriptive term more familiar to a Western reader than the original Japanese one.

Theories have only been included if they seemed reasonably well substantiated and not mere speculations. Controversies are pointed out as such and both sides presented. A critical evaluation of the material has been consciously avoided.

For the introductory part I am greatly indebted to the compilers of both Archæological Dictionaries published in Japanese and to Dr Kim Won-yong's 金元龍 monograph on Silla pottery.* I also wish to express sincere thanks to the regional editor for Japan and Chairman of the Japanese Archæological Association, Professor Dr Ichirō Yawata for kindly reading my manuscript and making valuable suggestions. Selection of the reports from *AJ* to be included in this section was also made in co-operation with Professor Dr Yawata. Owing to the preliminary nature of these reports clarification of doubtful passages must await their publication in full. A brief note dealing with the significance of the site and a few items of recommended literature are appended where necessary.

Acutely conscious of the severe shortcomings of the present section on Japan, we nevertheless hope that it may prove a stepping-stone towards an improvement of this section in the future.

2. THE YAYOI PERIOD

Yayoi 彌生 is the name given to the period of Japanese prehistory when Yayoi pottery (cf. following Section 3) was in use. Chronologically it succeeds Jōmon 繩文 and precedes the Burial-mound Period 古墳時代. It spans roughly five centuries, from the 2nd century B.C. to the 3rd century A.D. The term Yayoi is taken from a site appellation in Tōkyō, Bunkyō Ward, Yayoi-chō 東京都文京區彌生町 where, following an investigation in 1884, the existence of a pottery tradition distinctive from either Jōmon or Haji 土師 (cf. p. 42), was first recognized.

Three important cultural innovations are attributed to this period.

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* MIZUNO Seiichi and KOBAYASHI Yukio (ed. 1959), *Kōkogaku Jiten*, Tōkyō.
FUJITA Ryōsaku (ed. 1962). *Nihon kōkogaku Kyokaihen, Kōkogaku Jiten*, Tōkyō.
KIM Won-yong, (1960), *Studies on Silla Pottery.* Publication of the National Museum of Korea, Series A, Vol. IV, Seoul.

a. Although agriculture in the form of cultivation of root crops and cereals (millet) was already practised in the later phases of the Jōmon period, it was the *introduction of rice cultivation* at the beginning of the period under discussion which brought about transformation into an agrarian ecology.

b. Roughly contemporaneous with the beginning of rice cultivation is the *introduction of metal* (bronze and iron) from the Asiatic continent.

c. Abundant imported ware, cultural parallels on both shores of the China Sea and artifacts clearly due to cultural stimuli from abroad testify with absolute certainty to *frequent intercourse with Korea and China.*

Concerning the origin and first appearance of this configuration in Northern Kyūshū the following arguments are put forth:

i. Northern Kyūshū in the latest phase of its Jōmon period was under strong cultural radiation from the continent. Yayoi is therefore the result of Korean cultural stimuli on the heterogeneous local Jōmon scene. Because the cultural inventory of the latest Jōmon and earliest Yayoi phases is in some instances difficult to distinguish, a transitional stage leading to a local formation of the Yayoi type culture is suggested.

ii. Yayoi is a cultural phase developed on the continent and brought into Japan by one or several waves of immigrants. Chronological compatibility of cultural parallels on both sides of the straits, and the fact that weapons are the first metal implements introduced, are advanced to support this argument.

Since both hypotheses consider radiation from Korea as decisive in the formation of the cultural types of this phase of Japanese prehistory, they are not mutually exclusive; they merely stress different aspects.

The cultivation of wet rice being the mainstay of the economy, settlements in the Yayoi Period are generally found on upland terraces, elevations above marshlands and near water sources needed for irrigation. As indicated by the index site Toro 登呂 in Shizuoka prefecture 靜岡縣, the sizes of the rectangular paddy-fields tended to vary between 15 and 20 acres towards the end of the middle Yayoi phase. Agricultural implements were hoes and spades made of hard wood (oakwood) and a harvesting knife of polished or, in certain regions, chipped stone. Rice was reaped and stored in the ear. Granaries frequently stood on piles, with rat-guards near their upper ends. A notched tree-trunk served for ladder. Hulling was done in a wooden mortar with a long, wood pestle. Rice was apparently cooked in earthen pots. Hunting and fishing survived from earlier periods as subsidiary means of subsistence. Bows were made of wood, lacquered, or bound with cherry-tree bark. The arrow-heads were usually polished or chipped stone, occasionally also imported bronze. Imported iron single-edged swords are known, but the main weapons are imported double-edged bronze swords, lances, halberds and daggers. Stone imitations of these weapons are abundant. Spear and halberd points are either chipped or polished stone, or, infrequently, imported bronze points, all fitted with long sockets. Ring and star-shaped clubheads complete the armoury.

A very primitive, composite wooden loom and the cultivation of fibrous plants seem to be contemporaneous with the introduction of rice cultivation. Judging by the incidence of cloth impressions on pottery surfaces in different areas, the use of the loom, not yet known in Jōmon times, must have spread fairly rapidly. Body adornments were necklaces, armlets, etc. Stone beads of different types (*magatama* 勾玉, 曲玉 = comma-shaped, *kudatama* 管玉 = tubular) as well as glass beads and glass armlets are found, the latter imported as raw material or finished product. Armlets were originally made of shell. They were not the simple bivalvia armlets of Jōmon times, but were cut out from shell species like *Pugilina* (hemafusus) *ternatana* (Gmelin) for men, *turritellae* for women and *Cellana nigris quamata* (Reeve) for children. Bronze armlets imitative of turritella armlets and finger rings made of small turritellae or bronze are sometimes found. Armlets and combs made of lacquered wood, similar to those found in the latest Jōmon phase, survived into this period. Very small beads, sometimes of shell, presumably for fastening clothes, are occasionally found.

Dwellings have a round ground-plan or are rectangular with rounded corners. Pit dwellings are frequently found on high ground, but not in swampy areas like Toro. In the latter case, the floor of the house is either level with or higher up above the surrounding ground. The house is often enclosed in a ring-shaped earth wall, strengthened with palisades, or an earthen wall and a ditch. Judging by illustrations engraved on *dōtaku* 銅鐸 (bronze bells), the houses were gabled and the ridge-pole held in position laterally by two posts rammed into the ground. Some pits have a diameter of only one metre and are therefore considered to have been used for storage. Sites like Hie 比恵 in Fukuoka prefecture 福岡縣 suggest that several rectangular enclosures of about 30 by 33 metres, surrounded by a ditch and containing a compound of several pit dwellings and a well, made up a settlement which in turn was surrounded by a ditch. A communal burial-ground is usually found on the edge of the settlement. Simple and multiple disposal methods of the dead were practised and interment types display a confusing variety. As they are occasionally found in the same stratigraphical horizon, it would appear that certain persons received special consideration in the community. As to the simple disposal method, we find interment of the extended body (? in wooden coffins), pits, subterranean stone cists, stone-lined pits and also in extended or flexed position in jars (Fig. 2). (The term 'urn burial' we reserve for cremated relics.) Infants or embryos are mostly found buried in the Yayoi type of utility ware. Besides the above methods of disposal,

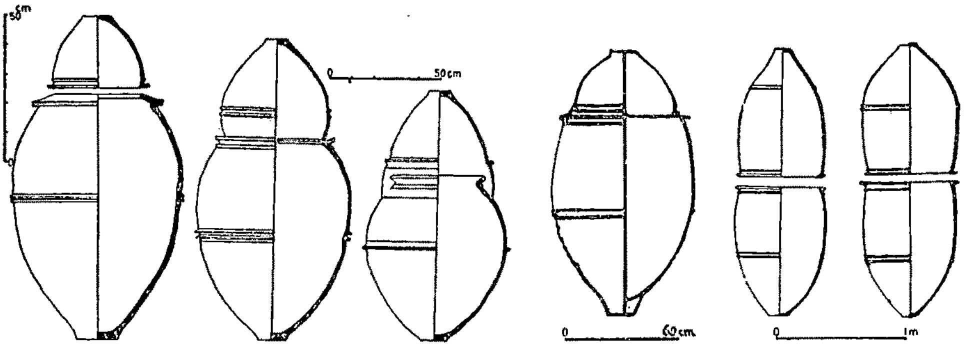

FIG. 2. Diagrams of various types of composite burial-jars. (*See* Pl. V*a*)
Sekai kōkogaku daikei, Nihon 2: 24–25.

unmarked on the land surface, we also know of tomb structures like dolmens, cairns and menhirs. Funeral furniture, often of imported bronze objects, is frequently discovered in the pit or jar, or in the ground nearby.

A further remarkable custom of this period is the joint interment of collections of pottery or bronze implements (mostly weapons and mirrors) at certain locations on mountain slopes overlooking the settlement, or under big natural rock formations. It has been suggested that all metal implements and ritual pottery belonging to a community were normally buried at designated sacred sites and only taken out on special occasions.

The centre of imported bronze implements, with preponderance of weapons in the earliest layers, lies in North Kyūshū. In other areas their presence seems to decrease in relation to the distance from this dispersal centre. One explanation why little imported ware is found in remote areas is that the metal was melted down to make *dōtaku* and mirrors.

3. YAYOI POTTERY

Contrary to previously held opinions, Yayoi pottery is now understood to have been manufactured by ring-building and not on a potter's wheel. Sutures can be clearly recognized, while surface treatment like scratching, finger-grooving and other methods of striation may have served to smooth the joints. Apart from a few very late vessels from the Kinki 近畿 area, no trace of the potter's wheel is found, although the use of a single turning table seems probable from the direction of certain comb-impressed decorations.

In the initial stages the paste with pronounced sand tempering does not greatly vary from that of the latest Jōmon ware. Tempering tends to diminish with the passage of time, but local and functional differences have also to be allowed for. The pottery is fired to a red-brown colour at higher temperatures (850°) than the preceding late Jōmon ware, but we have no evidence of special kilns.

Prominent vessel forms are jars and bottles, pots, footed dishes and bowls. They tend to appear in sets and may as such have answered all functional and ritual needs of the period (Figs. 3–5).

Jars 壺 used as containers for storage purposes are of a richly varied type. Basic forms are bulky, semi-spherical or globular vessels with a narrow, high neck, frequently funnel-shaped, a narrow mouth and an out-turned or flaring mouth rim. Frequent variations are cylindrical containers with wide or narrow necks, pitchers with handles, spouted vessels, truncated and gourd-shaped jars. Jars tend to be richly decorated, plain zones of the outer surface being highly burnished.

Pots 甕 for cooking purposes are globular or sub-globular vessels with wide mouths, often fitted with lids of slightly bigger diameter. Their variations in form are slight and rare, and their finish is comparatively rough. Great variations of size can be noticed, but all pots associated with dwelling sites have a diameter of between 20 and 30 centimetres; their height was also fairly uniform. The base of the pots is usually burnt red and sooty on the outside, while scorched particles of food (often rice) adhere to the inner surface. Pots of this same type, but without traces

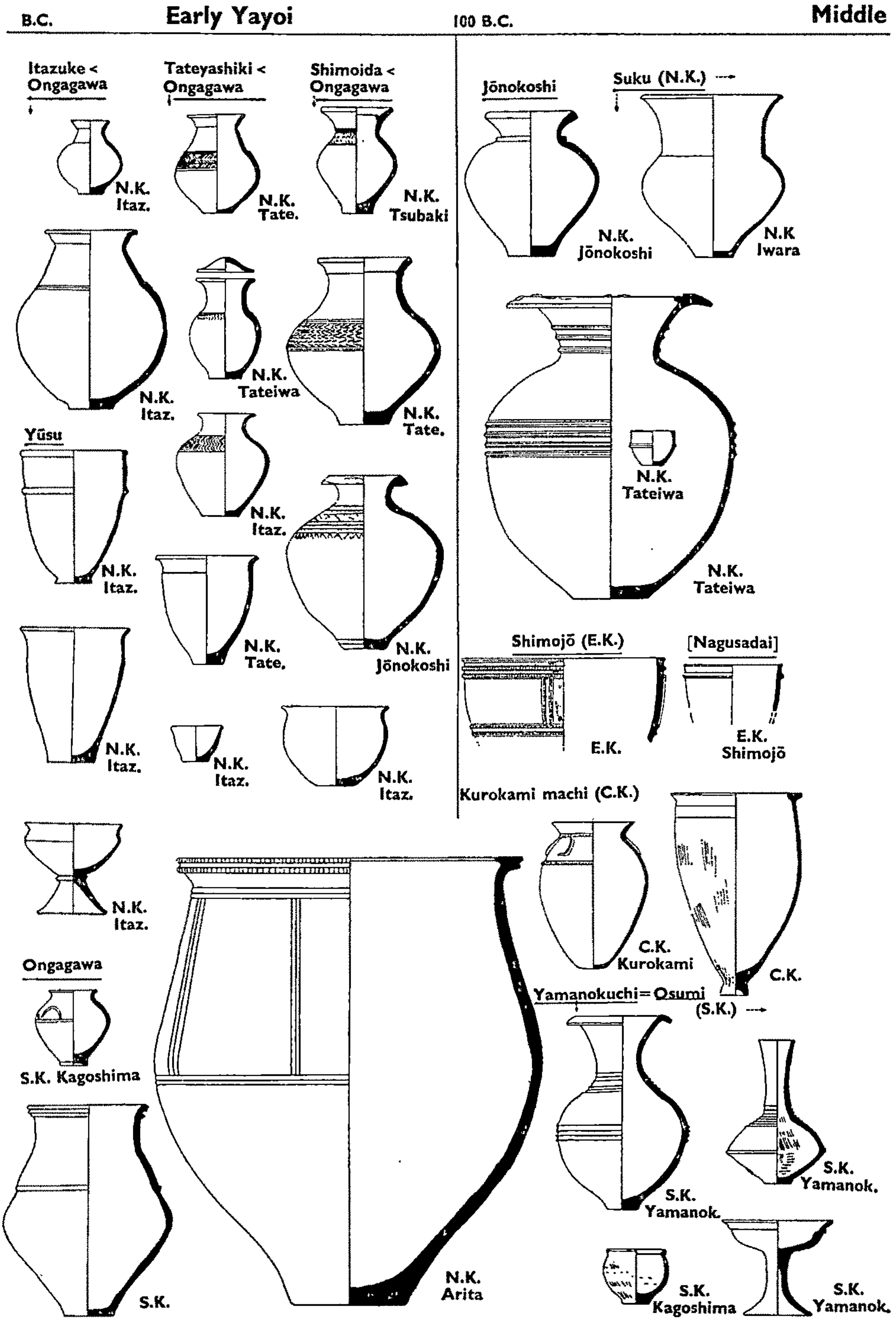

FIG. 3. Yayoi Pottery. Early and Middle Periods. Chronology of pottery types of Kyūshū Yayoi ware (after Kyūshū Academy, Vol. I). N.K. North Kyūshū; E.K. East Kyūshū; C.K. Central Kyūshū; S.K. South Kyūshū. The underlined site names are index type names.

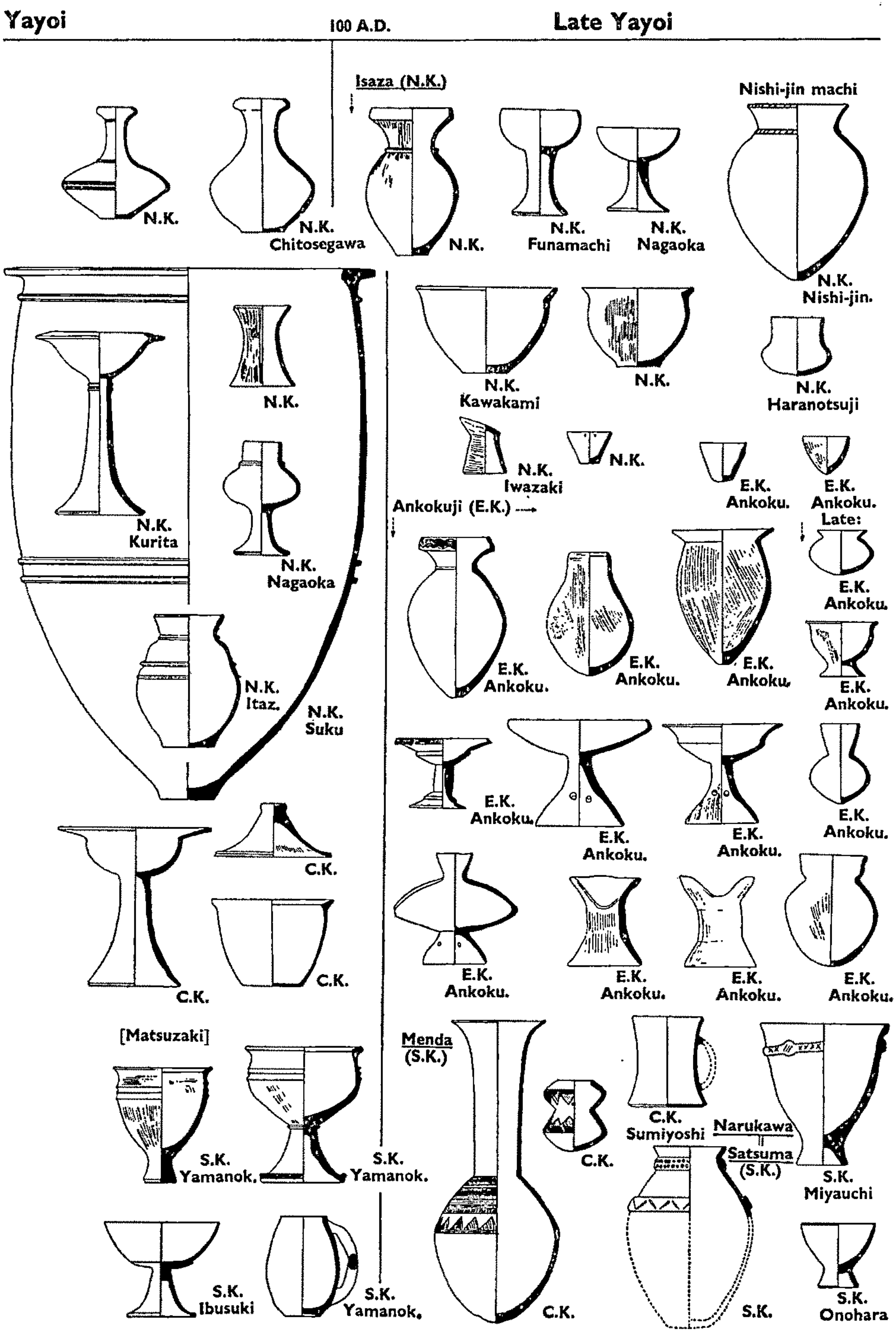

FIG. 4. Yayoi Pottery. Middle and Late Periods.

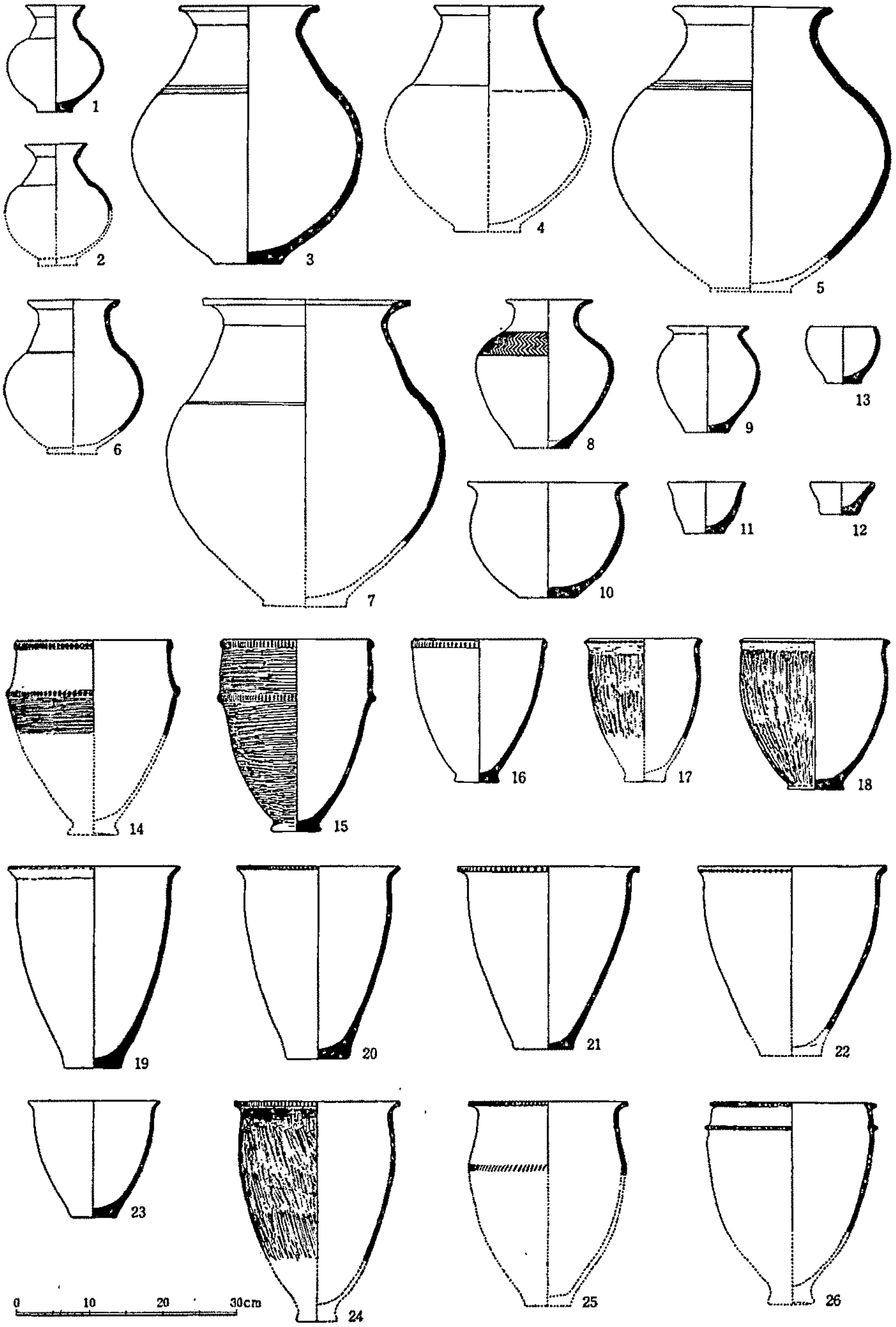

FIG. 5. Itazuke Pottery. Fukuoka City. (*Dr I. Yawata*)

of use over fire, are thought to have been water containers. Others have a perforated base and may have served as rice-steamers.

Footed dishes 高杯 show considerable variations in the height and basal breadth of their feet and inner depth—this may be attributed to different phases, or distributtion areas. These vessels, which are rarely as highly decorated as the jars, are usually burnished. Due to their fragility, footed dishes are rarely found whole when compared to other types of vessels.

Bowls 鉢 are usually of the large-mouthed variety. Local and chronological differences of form can be recognized. Most bowls are burnished, or decorated and burnished. Some have small handles and others are footed to resemble goblets.

Small earthen *hand-warmers* 火鉢, of a type in use to this day, are to be found since the beginning of the late Yayoi phase.

Decoration techniques usually create a striated effect by finger-grooving, surface scratching by various implements, incising by bivalvia shells or combs, cord-impressing and appliqué. Ochre painting is also often found. On a single vessel these decoration techniques are either used singly, or combined, or in alternation with plain zones. (Originally plain or subsequently planed by a spatula.) Decorations arranged in horizontal zones are therefore a prominent feature of surface treatment.

Different decorative styles can be distinguished for three geographical areas in which Yayoi pottery occurs. Since they coincide with differences in style of the latest Jōmon phases it appears that the artistic traditions of this period lingered on into Yayoi times, and created these zonal differences.

Zone 1: Kyūshū shows relative paucity of decoration and decorative motifs (mostly linear), but not of techniques.

Zone 2: East Japan is distinguished by a decorative wealth, degenerating into hypertrophy in many cases, while

Zone 3: The Kinki area occupies a medial position.

The initial phase of *Early Yayoi* may be termed a time of technical and artistic innovations, partly inexpertly executed, and their consolidation. *Middle Yayoi* shows a peak of expansion and variability and towards its last phases, the beginnings of a decline. *Late Yayoi* is comparatively uneventful, tending to alternate between exaggeration of form and decoration and further deterioration in quality.

4. Yayoi Ware in Kyūshū

Early types of Yayoi ware occur only in those areas of northern Kyūshū nearest to the Korean peninsula. Derivation of the early Ongagawa type pottery 遠賀川式 from Korean comb-pattern pottery has been suggested by several scholars already in the 1930's.

East Kyūshū, Chūgoku and the Kinki area come into the Yayoi period in the subsequent typological and chronological phase, and South Kyūshū even later.

The paste of the earliest ware is strongly tempered with sand, the colour of the vessels a dark grey or brown. Jars of this early type have a very roomy globular body, stable bases and a short, broad neck with out-turned mouth rim. The shoulder of the vessel is fairly pronounced and often decorated by zones of incised hatchings and cross-hatchings, set off from the undecorated, but burnished, parts by parallel horizontal lines. The body at its widest is another area of decoration. Ochre painting is sometimes seen on the inside of the rim or shoulder zone. Pots are frequently bucket-shaped and have a flaring rim. Decoration is usually limited to surface scratching and notching of the mouth rim. Footed dishes have rather deep dishes; the border between dish and foot is marked by carinations. The surface of the vessel is usually burnished. Bowls are deeply truncated, or basin-shaped and roughly finished.

Amongst the index types distinguished within the early Yayoi phase of Kyūshū, Yusu 夜臼式 appears to combine latest Jōmon and early Yayoi traditions. While paste, degree of firing, technique of manufacture, decorative techniques and choice of motifs are identical with the Itazuke 板付 type (see Fig. 5), vessel forms are entirely different.

In time the widest part of the body of jars tends to shift upwards giving the vessel a somewhat top-heavy appearance. There is a noticeable transition of the mouth rim from flaring to out-turned and horizontally folded forms. The neck is prolonged so that the vessel becomes bottle-shaped. Decorations, which tend to cover the whole outer surface of the vessel, consist of surface scratching, shell incision, etc., even the mouth rim receives the artist's special attention. Middle Yayoi paste appears well chosen and prepared; the colour is red-brown or yellowish-brown. The execution and finish of the ware are so skilful and uniform that it may be ascribed to professional potters.

In jars, the narrowing of the base, the horizontally-folded mouth rims and trend to bottle shapes are pronounced, while pots tends to become angular. The footed dishes have very high and hollow feet and their bases show variations in form. Body and neck in all vessel types are set at a distinct angle to each other.

In surface decoration the scratching and shell incising have given way to carination (*suku* 須玖式). Painting and burnishing are still popular.

Beginning with the end of the preceding phase, we find vessels of considerable size, over one metre in height, serving as burial jars; their distribution is limited to North Kyūshū.

Markedly inferior workmanship sets in towards the end of the middle phase. There is a noticeable tendency to further elongation of the vessel's proportions.

Inferior workmanship gets more pronounced in the late Yayoi phase. Jars and pots have egg-shaped bodies, disproportionately long necks and very unstable bases. The carination of their surface gives way to comb-incised motifs like multiple wavy lines, fan and related motifs, either over the whole surface or in certain parts of the vessel.

From the end of the middle Yayoi phase local specializations and local colour become distinguishable. An example is the Osumi 大隅式 type of South Kyūshū, with pronounced and multiple carinations, a hypertrophic development of the Sugu type.

In the late Yayoi phase the south of Kumamoto prefecture 能本縣 specializes in combed and curvilinear motifs. The Satsuma type 薩摩式 (South Kyūshū), a very thick pottery with broad, punctated appliqués, usually quoted in this connection, is now known to have been post-Yayoi.

5. THE BURIAL-MOUND PERIOD

The Burial-mound Period succeeds the Yayoi Period and leads into historic times. It covers the 4th–7th centuries A.D. Due to the great diversity, cultural differentiation and sophistication which are characteristic of this period, no agreement has been reached so far on its subdivisions into phases; mainly because of the many different principles of the classifications put forth. However, three phases: Early Phase (4th century), Middle Phase (5th century) and Late Phase (7th century) should prove generally acceptable.

Various theories about the emergence of this period have been advanced, but it is generally agreed that the momentous innovations of the Yayoi Period—rice cultivation and introduction of metals—gradually brought about a surplus economy which, in turn, gave rise to very powerful families. They gradually consolidated their positions by gaining control of the distribution of the quality goods imported and, later on, of the raw material needed for domestic production, while getting craftsmen from the continent. Judging by the funeral furniture of the heads of these families (who wielded absolute power) there was a gradual change in their status. At first they combined ritual with political leadership, later they delegated their religious functions to others. The funeral objects found in the burial mounds are of very much higher quality than those of the Yayoi Period. This points to a sharp sociological stratification of the population between powerful families and the masses, the living conditions of the latter differing little from those of their Yayoi ancestors.

There is no agreement regarding the origin of the burial mounds. Some authorities trace their evolution from the simple, small mounds indicating Yayoi burials in some areas. Others think that their emergence is connected with the rise of powerful families, i.e., ritual and political leadership became concentrated in certain families who perpetuated their high status in monumental tomb structures. Both theories fail to take into account an obvious affinity with the burial mounds of Korea.

Early Phase. The religious leadership exercised by the heads of the most powerful families (who alone qualified for interment in the burial mounds) was preserved. Funeral furniture, apart from Han 漢 and Wei 魏 mirrors, armlets, pendants and beads, staffs of authority and precious, three-legged and covered vessels for ritual ceremonies are evidence of this. There is a notable concentration of these mirrors and of jasper, widely used instead of the rare jade, in the Kinai 畿内 area. What is also obvious is the presence of foreign and local craftsmen like *tamatsukuribe* 玉作部 (bead-makers' guild) and *kagamitsukuribe* 鏡作部 (mirror-makers' guild), etc., at the seats of powerful families. Although we have no detailed knowledge of iron-working processes, the distribution of iron ore (imported from South Korea or locally won from iron grain) was in the hands of a central agency which thereby came to power. Smithery was done by hammering, for smelting was not yet known. An advanced technique of forging is seen in the presence of beautiful long swords. The traditions of the *Kara kanuchi* 唐鍛 (Korean smith) and *Yamato kanuchi* 大和鍛 (Yamato smith) are preserved in some outlying areas to this day. Among iron objects, weapons outnumber all other implements and, judging by their quantities in some burial mounds, the great families had large arsenals of weapons. Defensive weapons like armour and helmets, which appeared towards the end of this phase, are far less sophisticated than the weapons of attack. Armour consisted of small iron plates joined by strips of leather.

The other iron implements were hoe-blades, sickle-blades, hatchets, axes, adzes, chisels, awls and knives. Japanese archæologists believe that these tools, although found as funeral furniture in burial mounds, do not signify that the chiefs led the everyday life of a peasant, but rather that they constituted part of their ritual paraphernalia. Pottery (the so-called red *haji* 土師 ware) is considered to be but an improved Yayoi technique. *Haniwa* 埴輪, clay figurines of houses, implements, animals and men, so revealing of the culture of the period, show astounding expressiveness and artistic refinement, although technically they are produced in the same way as Haji pottery.

Middle Phase. The transition from ritual to political and military leadership took place during this phase. Heirlooms and treasures tend to disappear from the burial mounds and are replaced by imitations made of soapstone. This development puts at least imitation treasures within the reach of a broader segment within the ruler class, although genuine treasures (made of precious metals) are still the prerogative of the chieftains themselves. Gold diadems, earrings, belt buckles, gold inlay for armour, helmets, swords and horse trappings and, judging by contemporary *haniwa*, a new style of clothing, swept the burial-mound chiefs headlong into a wave of imitating the 'golden' rulers of Korea. So overwhelming was this urge to enhance one's prestige by possession of gold and silver ornaments that there is even a considerable incidence of faked gold ornaments (a copper core gilded). The smithing and fashioning of genuine gold and silver ornaments was entirely done by Korean craftsmen. There is a political background to this wave of 'Koreanism',

An expeditionary force from Japan under Yamato 大和 set out to conquer the small kingdom of Mimana 任那, at the southern tip of the Korean peninsula, and to turn it into a base for further undertakings. By assisting Silla 新羅 and Pek'che 百濟 against Koguryo 高句麗, the expeditionary forces sought to control war-torn Korea. They collected tribute in kind and technicians and introduced to Japan continental skills and customs on a scale unheard of and unfeasible in previous periods. Horses, which had had to be imported and were so precious that they were only owned by the mightiest, became plentiful after the Korean campaign where many cavalry engagements had been fought. Showy breeds of prestige value, with fancy trappings, were abandoned in favour of strong war-horses. Riveted armour, too cumbrous for mounted troops, was replaced by scale armour of the continental type. Archery was improved to discharge powerful projectiles: it replaced hand fighting with its large, gashing sword cuts.

Burial-mound pottery now changes to Sue 須惠 ware (Fig. 6), an offshoot of the wheel-produced and highly fired Silla kiln pottery.

Weaving technique and embroidery made notable advances. Damask and brocade were much in demand by the great ones. These leading families had by now become so powerful that they imported Korean technicians and engineers in great numbers and settled them near their own seats; they also mobilized large labour forces to construct many huge burial mounds. Smaller local chiefs imitated the mightiest on a scale commensurate with their means.

Towards the end of this phase the supremacy of the Tennō family was already uncontested, but fierce struggles for power were fought among the great chiefs of the next rank.

Late Phase. A further change in the political structure is indicated in this last phase by the appearance of groups of burial mounds 古墳群. Although the intervention in Korea failed in its immediate objective, the Japanese realized how backward their political organization was when compared to that of the Korean states. The Chinese official system, which had long been operating there, they now hurried to adopt. Koreans scribes were enlisted to keep their records. In short, the hierarchy of high and petty officials is now laid to rest in the burial mounds; rank is expressed by the magnificence (not necessarily the size) of the structure and the wealth of funeral furniture. At first only the mightiest lords had a burial mound. After the reform officials were also buried in such structures. The horizontal stone-chamber 横穴式石室 (which had reached North Kyūshū by the end of the 5th century, but had not spread widely until the later phase because it demanded superior skills) revolutionized burial mound building. Once the new technique was mastered, burial mounds proved easier and less costly to construct, because they could now be used as lineage tombs. In the late phase the changes began thus to reach down to a somewhat broader segment of the population. Cattle and horses were bred locally, although in small numbers and never for use in agriculture. Although the period saw the beginning of angle construction in architecture, the masses still lived mostly in pit dwellings and *haji* was the utility pottery throughout. Jasper for ornaments was limited to the areas where it was found; agate, crystal and glass replaced it elsewhere. Silver and gold ornaments achieve high technical and artistic sophistication and, gradually, acquire a Japanese flavour. This development is also noticeable in Sue ware and other aspects of contemporary material culture, anticipating the political unification and emergence of Japan as a state.

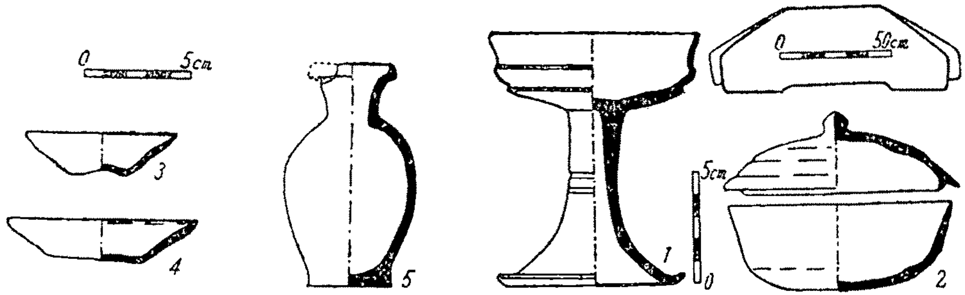

FIG. 6. Sue Ware from Hirosawa burial mound. See page 62.

6. Burial Mounds 古墳

Breaking with terminological usage, which takes the presence or absence of pottery, and its character, as the determinant factor in designating the earlier periods, the period now discussed is named after its characteristic tomb structures.

Japanese burial mounds are made of earth or of stones. On the basis of their ground plan three main types, round, square and keyhole-shaped, are recognized (Fig. 7).

Round mounds 円墳, which are the most fundamental type, have a round ground plan and are built up to a truncated cone (early and middle phase) or a cone (late phase). Small mounds of this type can also be found in the Yayoi Period. In the Burial-mound Period it occurs in various sizes, but rarely exceeds 100 metres in diameter.

Square mounds 方墳 are built up to a pyramid or truncated pyramid over a square base. The sides usually slope, meeting at an apex; stepped or terraced varieties are rare in Japan. Square mounds were built after the 4th century, but flourish in the 7th century. Later square mounds are orientated to the four cardinal points, the stone chamber facing due south. Beginning with Emperor Yomei 用明 (A.D. 586–587) many emperors were buried in this type of tomb. It may be advisable to change the Japanese term 'square mound' to the more familiar pyramid, stepped pyramid, or pyramidal tomb, in international usage.

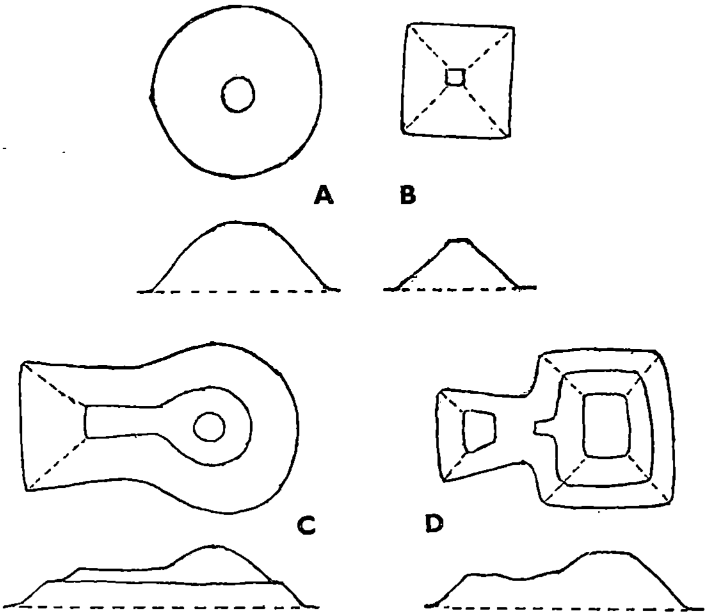

FIG. 7. Ground-plans and profiles of the common cut-in figure types of burial mounds. *a.* Round type. *b.* Square type. *c.* Keyhole type with square front and round rear. *d.* With square front and rear. *Sketch by Ichirō Yawata.*

Keyhole-shaped mounds 前方後円墳 are the most characteristic Japanese type. In Japanese terminology they are called 'front square rear round' *(zenpokoen)*, a curiously inappropriate description since the 'round rear' is the most important part of the structure, containing the chamber and the entrance, thus really representing the front. The basic type of the keyhole-shaped burial mounds consists of a round mound and a square annex. Chronological and local differences in the relative sizes of front and rear parts have been recognized (Plate I*a*).

Keyhole-shaped mounds of the early phase often make use of a natural hillock as a lean-to. To the mound a low square terrace is added, making the ground plan comparable in shape to a keyhole. Originally the tomb zone was apparently not marked off from the surrounding area by a moat.

Towards the middle phase of the period, the base end of the square annex is widened considerably and its height increased to almost that of the round mound. (Henceforth the term 'mound' will denote the round part of the structure, whereas the whole tomb will be called 'burial-mound'.) From both apexes it slopes to a lower terrace at the foot of the mound where the square projections on one or both sides are another innovation. Keyhole-shaped burial mounds of this phase are generally found on upland terraces or in plains and are surrounded by moats.

In the late phase the square annex has outgrown the mound in size, a development due to the use of a new type of stone chamber which restricts the size of the mound to a certain limit. Construction of very large mounds was, in general, discontinued in the late phase.

The peculiar shape of these structures and their size excited early interest and gave rise to different theories concerning their origin. Some authorities think they are meant to imitate the outline of an ox-drawn cart, hence 'cart-mounds' 車塚, others say they are merely the result of contact between two different mound-building traditions. It has also been suggested that the apex of a natural hill was used for the mound and the rest of the mountain cut away, leaving only a square projection. Recently the theory in favour is that this type originated when a permanent square platform was built to replace the temporary one on which the funerary rites were performed. Prestige demanded its ever-increasing size and it became merely ornamental, since the rites were conducted on the bank of the moat.

Within this general type the following important subtypes are recognized: *a.* the round mound is replaced by a square mound (front square, rear square 前方後方墳); *b.* two square annexes are attached to a central round mound 双方中円墳; *c.* the square annex is somewhat shorter than in regular keyhole-shaped mounds (scallop 帆立貝式古墳). It has been suggested that this is possibly a forerunner of the regular type, but all instances known to date belong to the middle phase. Representative specimens have a mound diameter of 100 metres.

The criteria leading to this classification are somewhat arbitrary. Since transition types are frequent, exact identification of a given burial mound as to subtype is often difficult and controversial.

The mound is very often erected over a chamber which, in Japan, is made of stone. Mounds built over stone coffins or sarcophagi (outer stone coffins used as receptacles for inner coffins) are also known.

With chambers, structural differences transcend building materials and form a more reliable criterion for classification than building materials. Accordingly Japanese terminology distinguishes vertical and horizontal chambers.

Vertical chambers 豎穴式石室 are named thus because they are built into the summit of a mound in such a way that the four walls are put in first (in many cases built round a coffin, let down into a pit, or deposed on a hard dirt floor) and the ceiling last. Stone chambers usually consist of andesite or quartz cut into neat slabs. In localities where such material is unavailable or the technical skills are not sufficiently advanced, rough boulders, or large river pebbles are simply piled up in dry masonry technique. Vertical chambers characterize the burial mounds of the early and middle phases. They are believed to continue the Yayoi Period's tradition of stone-lined burial pits (Pl. I*b*).

According to size three subtypes are recognized:

a.	length 6–8 metres	breadth 1 metre	height 1 metre
b.	2–3 metres	0·6–0·9 metre	1 metre
c.	3–6 metres	2 metres	1–2 metres

Subtype *a* is the prevalent form in the 4th century and is found associated with a special type of wooden coffin (log type). In the 5th century it is replaced by subtype *c* with a stone coffin. It is not known whether a wooden coffin is connected with subtype *b*.

The vertical stone chambers surviving into the 7th century resemble in their wall construction the horizontal chambers. Walls are often painted red and clay coffins (made of a soft Sue paste and fired) are found in certain areas. (Provinces Minasaka 美作 and Bizen 備前 of the Chūgoku area.)

Horizontal stone chambers 横穴式石室. This second type is thus called because it was constructed at ground level and covered with a mound. Many authorities think it was the materialization of a special concept of burying within an 'eternal house', which was supposed to replace the dwelling house owned during lifetime—this needs further substantiation. Horizontal chambers entered North Kyūshū from Korea (where they are found from early times) towards the end of the 5th century, but as they required new skills they did not spread. Another theory denies that all horizontal chambers in Japan are derived from this Korean/North Kyūshū type because there is a chronological gap and also certain constructional differences. Contrary to the vertical chamber (where the four walls are first constructed and then covered with a ceiling), here three walls and the ceiling are first constructed and last the fourth wall, representing or containing the entrance. A corridor, usually lower in height and much narrower than the chamber, leads out of the mound, the apex of which is directly over the chamber. The main chamber is either quadrangular or rectangular, but elliptical chambers are also known. The corridor may connect with the centre of the chamber wall, or be placed off-centre, or join the chamber at a right angle. In some cases an anteroom is placed between corridor and chamber; in others, a small chamber, better termed a niche, leads off the far wall of the chamber.

Natural rocks, boulders or neatly cut slabs are the usual building materials of this type of chamber. Border cases, making clear distinction from dolmens extremely difficult, are not rare (Pl. II*a*).

The floor of the chamber is of hard dirt; the first row of stones is vertically placed and dug in well below floor level. The upper layers of stone are usually piled up horizontally, each layer slightly projecting over the preceding one and creating a vaulted appearance. In addition to funeral furniture and coffins, the chambers often contain built-in stone coffin-stands and stone partitions. The corridor is closed towards the outside by a pile of boulders, a fitted slab, or even a wooden door.

Coffins. The predominant types found during this period fall into several categories.

a. Split-bamboo type wooden coffin 割竹式木棺 (log-shaped may be a more familiar description). It is hollowed out of the large trunk of an umbrella pine *(Scyadopitis verticillata)*, split in half lengthwise, the top half serving as lid. This type is found during all phases of the Burial-mound Period, but is relatively rare after the 6th century (Pl. II*b*).

b. Spit-bamboo stone coffin 割竹式石棺. A cylindrical stone coffin of somewhat unstable appearance, since both halves have a semicircular cross-section. In some coffins of this type a stone or wooden pillow is found. Both short sides have stone protuberances.

The typological position and relationship of this variety to other types are controversial, since it is, on the one hand, considered to be a forerunner of the boat-shaped type, from which some specimens are very hard to distinguish, and on the other hand, it is pronounced to be a translation into stone of the wooden type above. The relations between this wooden type and the boat-shaped variety are also disputed.

c. Boat-shaped stone coffin 舟型石棺. What distinguishes it from *b* is a somewhat compressed, sub-semicircular cross-section. It was in use from the latter half of the early to the middle phases. The sides of the lid slope upwards to a narrow central ridge and both lid ends are usually flattened. Protuberances, which may have served to lash together both halves of the coffin, or to suspend it for transport, are found on the short sides and sometimes on the long sides (Pl. III*a*).

d. Oblong-chest stone coffin 長持式石棺. This composite, fitted coffin appeared during the middle phase of the Burial-mound Period. It consists of a bottom slab, four walls and a lid. The parts are fitted together by grooves hollowed out near the edge of each slab. Its shorter sides are thereby inserted between the long sides. The long sides are also provided with one or two protuberances. The central ridge of the lid is somewhat elevated. The type is thought to imitate a certain Chinese type of coffin. In Japan it is usually found in association with vertical stone chambers, but sometimes also merely interred (Pl. III*b*).

e. House-type stone or wood coffin 家形石棺, 木棺. Its lid is roof-shaped. It is occasionally found in the middle phase, but is predominantly associated with late burial mounds. This type tends to have a gradually broadening central ridge. The lid assumes thereby a trapezoidal cross-section. On some of the lids as many as six protuberances have been noted. The coffin part may consist of a composite cist—as type *d*—or may be hollowed out. The protuberances in this type are limited to the lid; in later specimens they are even omitted (Pl. IV*a*).

A subtype of this variety (横口式石棺) has a large opening at one short or long wall, to allow entry without raising the lid. The opening is designed to allow post-funeral inspection of the body without the lid having to be raised; it is closed by a single or a double door. This subtype is found after the middle of the 5th century, in North Kyūshū.

f. Cloth coffin 夾紵棺, which did not enter Japan before the 7th century, consists of layers of hemp cloth lacquered together. A representative specimen with 35 layers of cloth is lacquered black on the outside and cinnabar red on the inside. Its dimensions are length 2·6 metres and breadth 0·65 metres.

g. Clay coffins 陶棺 in Japan belong to the late Burial-mound Period and are in their distribution mainly limited to the Kinki and Chūgoku areas. Their making has already been described above. Turtle-back coffins 龜甲形棺 and roof-shaped coffins 家根形棺 are known. There are numerous specimens painted red on the outside and likewise decorated with carved horses and human figures (Pl. IV*b*).

Funeral furniture in the early phase is usually limited to personal effects and ritual paraphernalia, placed in the majority of cases outside the coffin. Where a vertical stone chamber is used, funeral furniture is placed within the chamber, but outside the coffin. Overflow is neatly arranged outside the chamber. Gradually a change takes place and the number of the objects placed in the coffin increases. Many coffins have an inner partition marking off the space for funeral furniture. Objects of lesser importance, or those used for funeral or post-funeral rites, are left outside. Where a horizontal chamber is used, enough space for orderly arrangement of the funeral furniture is provided.

To sum up, in the early burial-phase a split-bamboo type coffin was deposed on the clay floor and a vertical stone chamber built around it and into the mound. In some later cases the stone chamber is omitted and the coffin merely coated with clay. A further change is the use of stone instead of wood for coffins of this type, or the boat-shaped variety. The oblong chest-type coffin is representative of the middle phase, the house-type coffin which is contemporary with it, is somewhat rare. The coffin types of the late phase are either wood or stone-house types. In some cases coffins were omitted and the bodies merely deposed in the chamber.

7. Haji Pottery

Haji 土師器 is a type of pottery made in the Yayoi tradition, but used as utility ware throughout the Burial-mound Period to Nara 奈良 (A.D. 710–782) and Heian 平安 (A.D. 794–1192) times. The name *haji* is of considerable age, being first mentioned in the *Nihonshoki* 日本書紀 (A.D. 720) in connection with the dynasty of royal court potters *Nie no hajibe* 贄土師部, a professional class whose traditional skills remained within the family or adopted descendants.

In archæological usage both Yayoi and Haji wares were originally termed Yayoi or *hanibe* 埴瓮 and even today the exact distinction of one from the other remains controversial. Some scholars consider small, round-bottomed vessels to be the first type of Haji pottery, while others insist that contemporaneity and association with burial mounds are more suitable criteria.

The paste of Haji pottery is very smooth and has in many cases been obviously levitated in water to wash out coarse particles. The manufacturing process, colour and firing (method and temperature) are identical with those of Yayoi proper.

Prevalent pottery forms are: pots, small bowls, goblets, footed dishes, crucibles, rice-steamers, cauldrons, footed stands, pottery ovens, etc.—mainly vessels for cooking or steaming cereals (Pl. V*c*). Haji ware was used in this function long after the introduction of the technically superior Sue pottery, and attests to a remarkable conservatism in dietary habits.

Decoration is practically absent from this ware. Haji is found today all over Japan in such uniformity that it is almost impossible to name a given vessel by its area of origin. The only exception is Haji ware from Tottori prefecture 鳥取縣 which is well decorated and therefore immediately identifiable.

To explain this uniformity, it is said that this pottery originated with, or was made by or under the supervision of the Hajibe court-potter dynasty and that it constituted a kind of currency or tribute. The Hajibe were really the core of a potter's guild, according to an ancient record (***Engishi*** 延喜式 A.D. 927). Other contemporary records give an interesting detail that pottery was made by women.

8. SUE POTTERY 須惠器

This type was produced in Japan after the second half of the Burial-mound Period by immigrant Korean potters. It is an offshoot of Silla because of its hardness and impermeability. The appellation 'porcelain' is, of course, not justified technically. During the Meiji 明治 period (A.D. 1868-1912) academic tradition subdivided this pottery into Korean and Iwaibe ware. Accordingly Korean ware 朝鮮器 was pottery with visible traces of the potter's wheel on its interior surface; vessels were usually large and for general use. Iwaibe 祝部 had no visible traces of the potter's wheel on the inside and the term was applied to small vessels, or ware for ritual use. Later it was realized that this distinction into two types was superfluous, although it is still maintained by some scholars. To complete the terminological confusion, some authorities assert that the whole tradition ought to be called Iwaibe, while others advocate the term Sue for it—the name favoured by a majority.

Sue ware has a smooth paste and is fashioned on a potter's wheel and fired in a tunnel-kiln (tube-shaped sloping kiln) capable of producing intense heat to over 1000°; it has a grey or dark grey colour and considerable hardness. It may have been introduced from China; others say it originated in South Korea (it is not found in North Korea). This new type of kiln makes possible the manufacture of a superior type of pottery like the Silla pottery in Korea and its Japanese offshoot. In Japan it appears largely as ritual and funerary ware, although most of its predominant forms are functional.

Mounted bowls with covers 有蓋高杯(豆) are most frequent. The cup or shallow bowl is supported on a slender conical foot which is either solid or perforated with round or triangular openings. These vents allowed the hot air to escape and not crack the vessel in the firing. The cover is supported by a narrow ridge running around the vessel below the rim (earlier form), or a ridge attached to the cover (later). The cover has one central, or several off-centre knobs which may be solid or perforated, conical, or of various other shapes. Judging by the Korean find material, where remains of solid food are often found sticking to these vessels, they were used for solid food, and not for drinking.

Mounted cups without covers were, on the contrary, drinking cups. There are other cups with or without cover, but without a foot. Sometimes a horn-shaped handle is attached.

Jars have a globular body and V-shaped neck. The base is either round, or, in later vessels, slightly dented. This footless jar was probably used either for storing food or carrying water; similar forms are still in use for these purposes in Korea to this day. A separate pottery stand 器台 for these jars is another frequent type; some jars are fitted with an attached foot. Some jars of this type have a round hole in the globular part of their body and were presumably used for holding fluids, the hole being plugged with a bamboo peg. The theory that this variety served as a musical instrument by blowing air across the hole is rather discredited.

One variety of jar has a trumpet-shaped neck, and another an almost cylindrical neck. Flattened flasks are of a typologically related shape.

Amongst pottery stands two varieties are observed. One is a tall, hollow conical stand with a shallow bowl to receive the round-bottomed jars (Pl. V*b*); the other a large, deep basin on a tall stand which may have served another function. Stands with a narrow base are considered early.

We also find zoomorphic vessels with clay figurines 象形工器 (zoomorphic, anthropomorphic or utensil-shaped), luted to the shoulder of the vessel or its cover.

To round up the inventory there are very big jars (height and diameter exceeding one metre) and a variety with the axes of the body bent at an angle to the neck.

Decorations are slant-lattice, herring-bone, bands of inverted triangular designs, dotted lines, concentric circles, squares filled with vertical lines, zig-zag bands, etc., all incised in the feet of mounted vessels, on covers, at the waist of jars and below the mouth rim of footed bowls or cups. Furthermore, carinating and applied bands, sometimes in turn decorated by punctations and incisions, and applied clay figurines, are other decorative techniques. On many vessels the beater's mark is found on both inner and outer surfaces.

9. HANIWA

Haniwa are clay figurines found in association with burial mounds. Archæological usage makes a distinction between cylindrical and figurative haniwa. The latter group consists of house-shaped, utensil-shaped, zoomorphic and anthropomorphic ware. A technical characteristic common to these haniwa is that they are all hollow.

The appellation *haniwa* in the form of *hanitsuchi* 埴 appears in written records for the first time in the *Nihonshoki* 日本書紀 (A.D. 720). The arrangement of these objects in a circle enclosing a sacred ground, is said to have given them their name of Haniwa (*wa*=ring, circle). The lower part of the haniwa was buried in the ground. Its exposed part was frequently painted white or red. Haniwa appear to be contemporaneous with the beginning of burial mounds, but clear chronological differences exist between various types. House and utensil-shaped figurines are found in the early phase of the Burial-mound Period; towards the end of the 4th century, bird-shaped figurines begin to appear. They are followed in the beginning of the 5th century by other zoomorphic decorations and lastly, towards the middle of that century, by anthropomorphic figurines. With different phases the predominant type of figurine, and the mode of arranging them, change. The cylindrical haniwa are found in all the phases and their arrangement always follows the circumference of the entire burial mound, or the base line of the mound itself. A third row of cylindrical haniwa was often inserted at middle height of the mound. After the middle phase of the Burial-mound Period when a moat was built, haniwa were also buried on its outer bank. Sometimes a separate sacred enclosure, near but outside the burial mound itself, is demarcated by cylindrical haniwa.

When house- and utensil-shaped haniwa were in vogue, they were often arranged in concentric circles on the apex of the mound, inside the circle circumscribed by the cylindrical variety. Lids and shields (utensil variety) were frequently arranged to create some pattern. When zoomorphic and anthropomorphic haniwa appeared, they were set up on the square annex, on the banks of the moat, or in rows right and left of the entrance to the stone chamber. In some cases the entire circumference of the burial mound is outlined by these figurines, or, at least, the central row of cylindrical haniwa replaced by the figurative variety.

The probable origin of zoomorphic and anthropomorphic haniwa was to replace the immolation of the living to be buried with a powerful lord when he died. Ancient records (*Kojiki* 古事記 A.D. 712) say that immolation was first practised at the death of Yamatotakeru no Mikoto 日本武尊 (legendary Japanese national hero, son of Keiko 景行 Tennō, O Usu, who is credited with defeating the Kumaso and Ainu in A.D. 71) and that this took the form of burying living beings up to their chest or neck around the mound of the lord (*Nihonshoki*, A.D. 720).

According to tradition Nintoku Tennō 仁德 (A.D. 313–399), deeply distressed by the shrieks of the tortured victims, abolished the custom. At the suggestion of Nomi no Sukune 野見宿禰 anthropomorphic haniwa were used in their place. This is not borne out by archæological findings, which conclusively date this type of haniwa to after the middle of the 5th century. It is known, however, that the descendants of Nomi no Sukune built tombs for the court. Many scholars opine that this family may have originated the legend to enhance their prestige and court rank.

The independent origin of zoomorphic and anthropomorphic haniwa in Japan is improbable since there existed already the zoomorphic and anthropomorphic stone figures in Han-time China and also in Korea. Clay figurines were in ritual and funerary use in China since the Yin and Chou dynasties as well as in Korea.

Defenders of the independent origin theory claim that even if such influence from the continent were granted, cylindrical forms and some house- and utensil-shaped haniwa were already in use before the zoomorphic and anthropomorphic types appeared. But this theory tells us nothing about the origin of those earlier varieties.

a. Cylindrical forms 円筒埴輪. The type of haniwa most frequently found are the cylindrical forms divided in turn into the ordinary cylindrical 円筒形 and the trumpet-shaped cylindrical (Pl. VII*a*). The cylindrical stem of both subtypes shows at least 3 or 4 carinations. Two or more holes are punched into the body at various places. They are either square or round, triangular or gourd-shaped. The cylindrical haniwa are very variable in size. Some specimens of the middle phase have a diameter of 50 to 60 centimetres. In the late phase, diameters are approximately 30 centimetres. Thick-walled haniwa are also characteristic of the late phase.

In burying these haniwa, one trumpet-shaped specimen is followed by several ordinary cylindrical ones. It has been assumed that the cylindrical haniwa served to mark off a sacred enclosure (burial mound or ritual platform) from profane surroundings. The theory that cylindrical haniwa were buried around the mound to guard it against landslides is out of favour.

b. Houses 家形埴輪. These figurines represent (presumably) all types of wooden structures of the period with considerable realism. Houses can be distinguished by the number of window openings from mere utility buildings like granaries, storehouses and barns with only one (door) opening. Among granaries those apparently on piles are frequent. Roofs are saddle-backed (tower roof with two opposite gables and a concave upper outline). House-shaped haniwa appear from the early phase (Pl. VI).

c. Utensils 器財埴輪. Most often represented are ceremonial umbrellas as signs of rank, shields, arrow-cases, armour, ritual fans, chairs, hand-protectors (for archers), large swords, halberds, mounted cups, bowls with covers, etc.—in short the utensils carried in the procession of a powerful man when he went abroad. It follows that they were most probably destined to serve him in place of the actual utensils on his last journey into the Beyond (Pl. VIII*b*).

d. Zoomorphic objects 動物埴輪. Animals most frequently modelled are among the domestic animals: the horse, dog, ox and barn fowl (the first two species are predominant), and feral animals like boar, deer, monkey and aquatic birds. They are almost without exception portrayed stationary, though realistically. Animals in motion, or even with the head turned to one side, are rare (Pl. VII*b*).

e. Anthropomorphic objects 人物埴輪. The usual division is according to posture, into standing and sitting figurines. Those standing are either modelled complete to the feet, or have an upper part superimposed on a cylindrical stand (Pl. VIII*a*). Less frequent are figures sitting cross-legged or with feet hanging down, and kneeling with both hands placed on the floor in the formal posture of obeisance. Both sexes are represented, men either in ordinary or formal attire, or clad in armour. Nobles in ceremonial costume are complete with coronets, long swords and other signs of rank. The occupations recognizable are falconers, musicians (*koto* [Pl. VIII*c*], and drum) and peasants with a hoe tucked into their belts. Women are usually portrayed in some ritual function like ceremonially offering a jar, or in the attire of a shaman (with shamanistic paraphernalia). One more variety are women with a child strapped to their backs. Naked figures of both sexes, sometimes with exaggerated genitals, are said to represent the common people. Anthropomorphic haniwa in motion, predominantly dancing figures, are comparatively rare.

Stylistically, a division of figurines into realistic and stylized varieties can be made, the dancing figurines belonging largely to the second group.

The anthropomorphic haniwa give some insight into aspects of contemporary culture which otherwise would be denied to us. However, the anthropomorphic haniwa are strictly representative only of their own phase within the Burial-mound Period (after the middle of the 5th century). From the body adornments of the early phase, known to us from actual finds, and those shown on the haniwa of the later phase, this aspect of culture seems to have known no revolutionary changes.

Men of the phase represented by the haniwa wore their long hair parted in the middle and bound up at both temples. Women wore theirs either gathered and bound at the nape of the neck, or put up in a style reminiscent of the *Shimada* coiffure of later times.

Men were dressed in upper garments resembling in style recent Japanese undergarments. Over this a long trouser-skirt, similar to the recent formal *Hakama* 袴 was worn. Women's upper garments were similar to men's, over them they wore a long skirt. Accessories like hats, belts, shoes, necklaces, earrings, combs, etc. are all indicated. Commonly found accessories of armour are leather hand-protectors (against the back-kick of the bow-string) and various types of arrow-cases, swords and daggers.

Anthropomorphic haniwa are interspersed with house haniwa surrounding the mound, on both sides of the entrance to the stone chamber and on the outer bank of the moat. In the case of a scallop-type burial mound, they are arranged over the annex. Sometimes they are also found in groups, but are not, apparently, meant to represent some particular tableau.

We still do not know how to account for fluctuations in the character, style and scope of anthropomorphic haniwa, nor whether certain types were connected with special functions, or assumed special meanings in a particular context.

ARCHÆOLOGIA JAPONICA 日本考古學年報

ANNOTATED TRANSLATIONS

HYAKURYŌYAMA SITE 百両山 *AJ*, 9(1956): 98

Location: Niigata prefecture 新潟縣, Arai town 新井市, Hyakuryōyama.

Date of research: 14–26 April 1956.

Participants: Komai Kazushika, Yawata Ichirō, Yoshida Shōichirō, Komatsu Yoshio, *et al.*

Reporters: Komai Kazushika, Amakasu Takeshi.

The site at a foothill of Mt Myoko has a north-south extension of 210 metres, an east-west extension of 170 metres and a height above the paddy fields at its feet of 40 metres. The plateau at its summit is 210 by 80 metres. The 47 indentations located on the plateau are suggestive of pit-dwellings. Following last year's distribution study of the pits, their division into northern, southern and central groups could be confirmed this year and the character of the site clarified by a number of excavations. A moat was found running the entire length of the foothill at the 20 metre mark. The site is to date the southernmost instance of the *chashi*types tronghold.

Lot 31: Southern group. Dimensions of indented area before excavation: diameter 4 metres, depth 35 centimetres. After excavation: north-south extension: 2·70 metres, east-west extension 2·60 metres.

The ground plan is square, there are no clearly identifiable postholes, although four small pits (diameter 15 centimetres) dug into the floor halfway between every two corners, may be postholes. Remnants of a baked-clay floor are found in the southeast part of the pit. A small ditch runs roughly parallel to the west wall of the pit at a distance of 70 centimetres. It bends to follow the south wall, but runs due north to an unknown destination. Charcoal, fragments of baked clay and pottery sherds were found in this ditch.

Lot 10, 11: Northern group. Indentation is not indicative of a dwelling pit. When the excavation area was extended beyond indentation, a belt of black earth, running north-south with a width of 3·5 metres and thickness of 10 centimetres and containing numerous pottery sherds, was found. This belt slopes gradually off to the south but widens in the north, and contains many pottery sherds and charcoal. It leads to a pit (dia. 2 metres, depth 1·2 metres) which has been numbered lot 10. The pit's floor is laid out with flat pebbles. The earth filling has three horizons, all three containing pottery sherds, charcoal and baked-clay fragments. There is no evidence of a change in the type of pottery sherds in all three horizons, suggesting that the pit was filled within a relatively short time.

Lot 24, 25: Central group. Dimensions before digging diameter 4 metres, depth 20–40 centimetres. The excavation clarified that it was not used as a pit-dwelling.

Lot 6: Far end of the northern group. Dimensions before excavation: dia. 4·5 metres, depth 30–40 centimetres. After excavation: north-south 4·05 m., east-west 4 metres.

Due to dislocation by tree roots the ground-plan cannot be reconstructed accurately. Irregularities of outline and different floor levels suggest several superimposed dwellings. Three fireplaces were found. Pottery sherds are very small, but prevalent forms are found to be jars, pots, footed dishes and pottery stands. The pottery shows some relation with that of the Chigusa site 千種 on Sado island 佐渡 and should be dated latest Yayoi or, possibly, earliest Burial-mound Period.

NOTE: *Chashi* is Ainu for 'palisade' or 'stronghold'. These took advantage of natural features and are therefore to be found on isolated capes, steep river banks, cliffs above the seashore, on isolated hills, surrounded on three sides by natural barriers. Communication on the fourth side is cut off by a single, double or triple moat, whereby the earth material of the moat forms an earth wall on the interior bank which is fortified by palisades and intermittent watch-towers. If attacked, the defenders threw stones or shot arrows from the watch-towers.

As these structures are thought to be closely connected with the Ainu problem, they have been the subject of many speculations. Their construction, and descriptions of them in ancient records, show that they were defensive strongholds; in peace time some may have served as dwellings and ritual assembly places.

Their distribution all over south Sakhalin, Hokkaido 北海道 (here alone several thousands of them are known), Chishima 千島 and North Honshū 北本州 coincides with the former or present habitat of the Ainu. Most scholars are of the opinion that the *chashi* is not an original feature of Ainu culture, but was brought in by another ethnic group. A group very often mentioned in this connection are the Mishihase (Su-shen 肅愼 of Han time records or 女眞 Jurchen) who some also consider to be the bearers of the controversial Ochotsk pottery. They seem to have lived in Northeast Manchuria during the first half of the first millenium A.D. and appear in Chinese records as pirates with an astonishingly wide range of action. According to Japanese records they raided the west coast of Honshū during the 6th century A.D. and had an operations base on Sado Island. I have therefore thought it worthwhile to give here this particular hypothesis. But the identity of the Su-shen with the bearers of the Ochotsk pottery can be counted out, since the skeletal finds of Moyoro 最寄貝塚 shell-mound showed strong affinities with the Aleutians and the Eskimos of West Alaska, whereas the Su-shen must have been a Tungusic people. While the original builders of the *chashi* type strongholds still elude us and connection with the Ochotsk pottery complex is most doubtful, a structural and cultural relation with the Gorodišcé of Eastern Russia and Western Siberia must be noted.

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FUNAKI 舟木 *AJ*, 9(1956): 100

Location: Hiroshima prefecture 廣島縣, Toyoda county 豐田郡, Hongo-chō 本郷町, Funaki 舟木.

Date: 17–18 August 1956.

Participants: Shiomi Hiroshi, Itoga Masaaki, Sugiyama Hiroshi.

Reporter: Shiomi Hiroshi.

This is a jar-burial site, consisting of a stone cairn built over a burial jar. It is situated on top of a low foothill (20 metres), fringing the gorge cut by the Numata river 沼田川, west of the railway station Mihara 三原 on the main Sanyō 山陽 railway line. It was discovered when the owner of the land dug a pit for charcoal burning. The site was investigated and restored to its original state by the members of the Numata River Area Cultural Property Protection Society.

The earth under the cairn had only been dug to a depth of 30 centimetres and the lower half of a decapitated jar deposed. Gaps between the pit walls and the jar were filled in with sand. A cover, fashioned from the lower half of another decapitated jar, had been put over the container, but had fallen in when discovered. The character of this jar dates it as late Yayoi. Over this jar a stone cairn made of river pebbles, diameter 3 metres, height 75 centimetres had been erected and was covered, on discovery, with a layer of 10 centimetres of eroded soil.

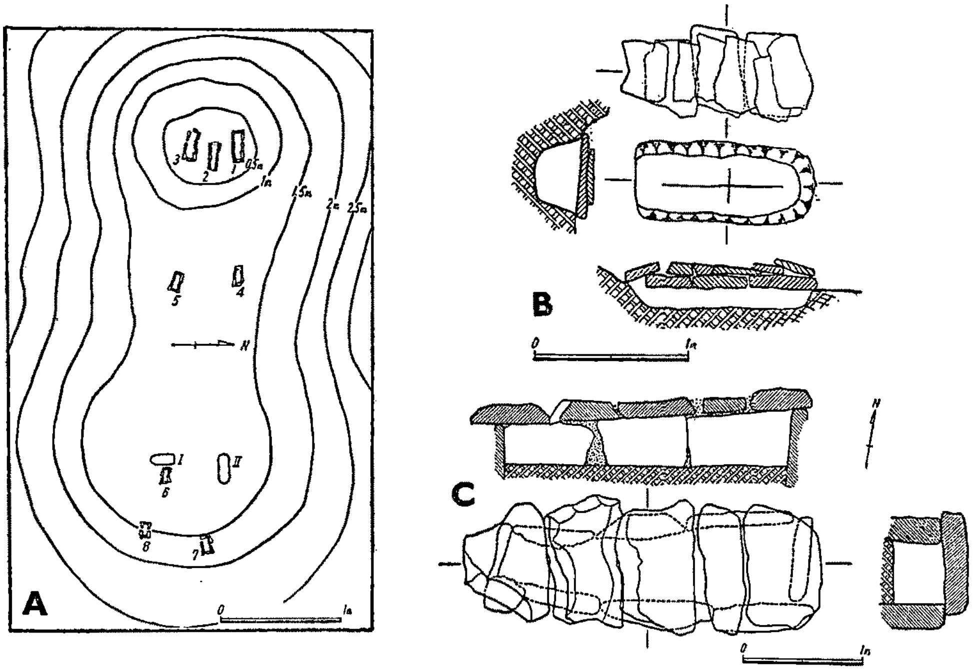

FIG. 8. *a*. Funaki burial mound showing its stone cists and earth pits. *b*. Earth-pit with stone cover. No. 1. *c*. Stone cist, No. 1.

NOTE: The significance of this find lies in that this type of jar burial (index type: cylindrical, wide-mouthed jar with mouth rim folded horizontally, often carinated and used as burial units of two jars placed mouth to mouth; ordinary jars and pots are often substituted for single burial jars or jar units, cf. pp. 54–60) was originally believed to be limited to northern Kyūshū and the coastal parts of Yamaguchi 山口縣 prefectures. This type of jar burial has strong typological and chronological affinities with the jar-burial sites of South Korea and appears to have reached Japan from there. It is believed (Kim 1960: 32) that the jar burials (2nd century B.C.) predate the beginning of the Kimhae period in Korea.

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KAJIKURIHAMA 梶栗濱 *AJ*, **10**(1957): 102

Location: Yamaguchi prefecture 山口縣, Shimonoseki city 下關市, Kajikurihama.

Date: 21–30 January, 16–24 February 1957.

Participants: Kanaseki Hiroshi, Kokobu Naoichi, Yoshimura Jiro, Tanaka Taku, Mizuno Masayoshi, Ito Teruo.

Reporter: Kanaseki Hiroshi.

The site is situated on a low sand dune (height 3·5 metres above sea level), in the coastal plain north of Shimonoseki city.

A trench (3 by 20 metres) was dug directly south from the spot(?) where in 1913 two narrow bronze swords and a bronze mirror had been picked up. A second trench (4 by 5 metres) leads from the south end of Trench I to the west. In Trench I, remains of a structure and one or two early Yayoi jars were found at a depth of 1·5 metres. This deposit was followed by a sand layer of 30 centimetres covering a stone cist, or alternatively, rows of pebbles outlining a rectangular space. A burial jar covered with a pottery basin was found at the same level.

Trench II yielded a stone cist and another rectangular pit constructed with pebbles. Under this were found sherds of earliest Jōmon pottery. It may be assumed that the above-mentioned stone structure was a tomb marker of some sort.

NOTE: Co-existence of jar burials and stone-lined pits also characterize jar-burial sites in North Kyūshū and South Korea (cf. preceding note and literature).

DOIGAHAMA 山井個磯 *AJ*, **10**(1957): 102

Location: Yamaguchi prefecture 山口縣, Toyoura county 豐浦群, Toyokita-chō 豐北町, Doigahama.

Date: 1–16 August 1957.

Participants: Kanaseki Takeo, Nagai Masabumi, Kobayashi Yukio, Tsuboi Kiyotari, Iseki Kōtarō, Kanaseki Hiroshi, Mizuno Masayoshi, Eto Hajime, Sanno Hajime.

Reporter: Kanaseki Hiroshi.

This constitutes the fifth consecutive season of research on this site since 1953. Previous studies suggested separated burial areas, depending on the sex of the deceased. Male skeletons appeared to be dominant in the eastern section of the burial area and female remains in the west. Our object this year was to confirm this impression. To this end the excavation area yielding the female skeletons was extended to the southwest and northeast. In the southwestern section 3 female and 4 male skeletons were found, the female remains left untouched after disposal, the male skeletons subjected to a second phase of disposal, which consisted in collecting the bones at a later date. The northeast section yielded 3 female and 11 male skeletons, one of them in a stone cist. Within this subsection the women were placed towards the west. All burials (within this section?) are orientated to the east and pebbles placed at all four corners (of the pits?).

In view of our findings, it appears certain that (within this burial area?) male remains were generally placed in the eastern part, female remains in the west, although a few female and infantile skeletons are found interspersed in the sector reserved for men. A great amount of Haji pottery, iron implements and two bronze mirrors were found above the layer of early Yayoi pottery sherds (where?). They are interpreted as evidence of post-funerary rites.

Geological and geographical investigations with the object of studying the physical environment of the site during the early Yayoi period took place simultaneously with archæological research.

NOTE: A different type of disposal method for men (multiple) and women (simple) at the same burial site and horizon is of great significance from the point of view of disposal method typology, if it can be proved to have been more than local usage.

TANEGASHIMA, HIROTA 種子島廣田 *AJ*, **10**(1957): 106

Location: Kagoshima prefecture 鹿兒島縣, Kumage county 熊毛群, Tanegashima (Tane Island), Hirota.

Date: 16–30 June 1958.

Participants: Kokubu Naoichi, Imo Shigehisa, Hayashida Shigeyuki, Omori Asakichi, Morisono Naotaka.

Reporter: Morisono Naotaka.

This site is situated on a sandy beach near Hirota and was discovered when the high winds and waves of Typhoon No. 22 exposed a great number of human remains and shell objects. Since the sand dunes serve as wind and wave breakers and trees are planted there to protect the nearby paddy-fields, the research area had to be limited to small trial trenches for dwelling and burial areas. As regards the burial area, the section exposed by the typhoon was investigated (trial trench 2·10 by 10 metres; Pl. IX).

In the uppermost layer two rows of pebbles or coral blocks were found to frame seven groups of burials, each containing two or three bodies (skulls and long bones only). The long bones were deposed in a position corresponding to that in the body and the skulls placed collectively at both ends (of the frame?). Deer bones were found mixed up with human remains. Shell rings were still affixed to arm and thigh bones (Pl. X*b*) and there were great numbers of shell beads and carved shell pendants. The next layer contained burnt bones, shell beads and other shell ornaments in areas directly under every group of burials in the above layer. This was a multiple disposal, in the second phase of which the long bones and skull were gathered and the rest burnt.

The third layer again contained burials: coral blocks and pebbles surround the body(ies?) In this layer the skull is placed on top of the long bones or, alternatively, two bodies are laid to rest skull to skull. Under this is a layer of remains of infants, terminated towards the following layer by a deposit of wreath shells. Infant remains are also found amongst the shell deposit. This layer is followed by a layer containing flexed burials and collected remains as above. This layer is close to bedrock.

The shell ornaments found in great numbers with these burials differ in form according to the phase of disposal they are associated with. Pendants and other perforated shell ornaments (carved *t'ao-t'ieh* 饕餮 patterns and small comma-shaped dragon pendants) (Pl. X*a*) are limited to burials of the first phase or a simple disposal method. Shell beads and rings are, however, found in great numbers on all burials. The investigators opine that the small beads imitate an old Chinese custom of Ts'in 秦 and Han times [i.e. placing beads about a deceased, since they were credited with powers to preserve the body against decomposition and assure resurrection—*Translator*]. Likewise the pendants, as described above, conform in style and function to Chinese models. (*T'ao-t'ieh* pattern known from Lungshan and Yangshao cultures where they appear to have had ritual significance; in the Yin and Chou times they were secularized to a purely ornamental function). The type of disposal conforms to practices of the southern islands, but the funeral furniture is Chinese, apparently directly dispersed from a coastal area of South China. A trial trench (2 by 4 metres) into the supposed dwelling area had to be abandoned when it collapsed. Stratification is uncertain, but Sugu-type sherds (see Figs 3 and 4, and page 34, Yayoi ware in Kyūshū) and pottery sherds akin to those found in the southern islands(?) at a later period(?) were recovered. A second trench was dug into the exposed area, facing the sea. A stratification of three layers of sand mixed up with shell particles was exposed. They contain very few artifacts, but a few sherds of the mouth rim of a Sugu-like vessel were identified in the third layer.

Identification of shells used for shell ornaments: *Chelyconus* (Mörch), *Pugilina haemifusus* (Gmelin), *Pyrene testudinaria tylerae* (Griffith et Pigeon), *Oliva mustelina* (Lamarck), *Unio douglasiae nipponensis* (von Martens), *Turbo marmoratus* (Linne). They are all warm-water shells.

NOTE: Definite proof of a relation between this burial site and nearby Yayoi sites has not been established, in spite of successive periods of investigation. The passage stating that the method of disposal conforms to that of 'southern islands' refers to the Ryūkyū islands where a similar disposal method has been practised from a date yet unknown to this day. There is little doubt that this disposal method spread from China probably at different times to different areas; mostly it was abandoned in favour of other methods, but has survived in some areas to this day. The results of later seasons of research on this site indicate that both types of disposal were found on one level. (Like site Doigahama, p. 52, the simple burials are, with one exception, female skeletons adorned with shell pendants and beads in a way that suggests they were ritual experts.) This again presents a parallel to recent Ryūkyū practices whereby the female ritual experts alone of all people are exempted from the second and third phases of the disposal method. The one exception is a young male transvested with exactly the same adornments as the females. This is also occasionally found in the Ryūkyūs among ritual experts and might be a parallel case. It is not suggested by this commentator that the recent and contemporary multiple disposal method of the Ryūkyūs is derived genetically from Yayoi-time Tanegashima.

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SHIROYAMA 城山 *AJ*, **11**(1958): 91

Location: Hyogo prefecture 兵庫縣, Ashiya town 芦屋市, Shiroyama 城山.

Date: 6 August 1958.

Participant and Reporter: Murakawa Yukihiro.

A deposit with cultural artifacts found on the summit of Mt Shiroyama (250 metres) was excavated. In its three layers were numerous artifacts of middle Yayoi date. The lowest level of the deposit was the floor of a dwelling. Since the site was not disturbed at all, extension of the investigation beyond the present area of excavation is worth undertaking.

NOTE: Yayoi settlements have so far not been expected at such elevations (see page 27).

RYŪGADŌ CAVES 龍河洞 *AJ*, 10(1958): 94

Location: Shikoku island 四國, Kōchi prefecture 高知縣, Ryūgadō caves.
Date: 24–28 July 1958.
Participants: Members of the Educational Committee, Kōchi prefecture.
Reporter: Okamoto Kenji.

The site is situated in limestone caves, the front cave of which was excavated. A surface layer of black soil (10 centimetres) is followed by a clay layer with intermittent ash deposits (5–20 centimetres). From the thickness of the ash deposit it is assumed that this was not just a temporary shelter. The find inventory consists of late Yayoi pottery sherds, armlets, perforated antler implements, stone net-sinkers and two bronze arrow-heads. Animal bones and shells were found in considerable numbers. That the arrow-heads were typologically identical with those of the earliest Burial-mound Period is significant.

SAGA CULTURAL ASSETS REPORT

HAYAMAJIRI 葉𡋽 DOLMEN SITE

[The following report is not taken from *Archæologia Japonica*, but from the Saga Prefecture Educational Committee's *Cultural Assets Report* (1956). I give it here for its exceptional importance.]

The continental methods of disposal of the dead in jars, stone cists, etc., have entered Japan through northern Kyūshū. Another manner of disposal, in dolmens, has come to light in recent years. Its distribution is limited to North Kyūshū, i.e. the Itoshima county of Fukuoka prefecture 糸島, 福岡縣 and the Karatsu district of Saga prefecture 唐津市, 佐賀縣. The present site is situated within the boundary of Karatsu town 唐津市, Kagamihanda 鏡半田 on a foothill of the Chikushi 築紫 mountain range, facing the coastal plain. The whole district is dotted with sites of the Yayoi Period and dolmen groups, where surface bronze implements and Han Period mirrors have been found. The area is said to coincide with the country of Matsura 末盧 of the *Wei-chih Wo-jên chuan* 魏志倭人傳.

The Hayamajiri 葉𡋽 site, which was discovered in the course of cultivating the fields, contained 5 dolmens with 26 jar burials. The dolmens are big cover stones and several supporting stones, all left in their natural state (Pl. XI). Burial jars and pits were found under the cover stones (Fig. 9).

Dolmen No. 1 支石基: It lies on the north side of the hillock. The cover stone is 1·85 metres long, 1·2 metres broad and 30 to 40 centimetres thick. Its weight is 1,272 kg. In shape it is a somewhat irregular rectangle. Before excavation only the cover stone was partly visible. The 7 supporting stones are all between 20 to 50 centimetres long. Directly under the cover stone, which was lifted by block and tackle, were 6 burial jars (two single jars turned upside-down, one single jar buried upright, three jars and pots placed mouth to mouth). Few burials of several individuals under one dolmen, or an upright burial of jars, had been discovered to date.

Dolmen No. 2 is very near and almost parallel to No. 1: There is also very little difference in their size. Between the supporting stones ochre-painted pottery sherds were found. Directly under the cover stone a rectangular pit with rounded corners was found. No human remains. Two burial jars were just outside the pit walls (both of them of the jar-cum-pot variety, cf. Pl. V*a*).

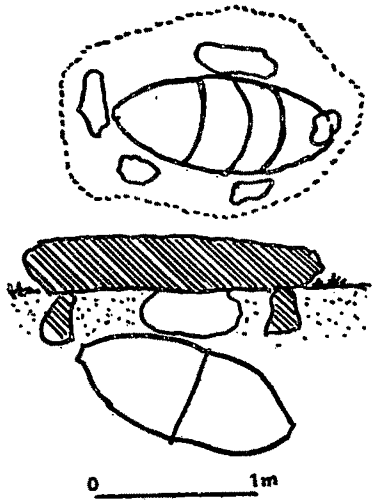

FIG. 9. Diagram of a dolmen with jar-burial. *Sekai kōkogaku daikei,* Nihon 2: 31.

Dolmen No. 3: The supporting stones are again laid out in the shape of a 'turtle' (head, 4 legs, tail). Under the cover stone was a round pit lined with small stones at the bottom centre. The stones are of a sort not seen in this area. Two burial jars (jar-cum-pot) are of the very rare, early Yayoi Ongagawa type (*see* Yayoi ware in Kyūshū, pp. 33–34). Since they too were buried upright, the remains are broken into very small fragments. Nearby is a layer containing Yayoi pottery sherds and charcoal.

Dolmen No. 4 lies to the east of the hill. It is the smallest of all, and the most nearly rectangular. The supporting boulders are again left in 'turtle' form. An obsidian arrow point was found near the bottom of the pit under the dolmen.

Dolmen No. 5 has not yet been investigated. Judging by trial soundings with a boring rod it appears to contain burial jars. The stone material used for the cover stone is the same as that used later in the construction of stone chambers; the site where this stone was quarried has also been discovered.

North of No. 5 eight further jar burials, tubular beads and iron fragments were found. Jar burials also surround No. 1 while tubular beads, bone fragments and teeth are strewn over the surface of the area. Judging by pottery fragments this site seem to range from early to late Yayoi.

NOTE: Dolmens are known from the early phase in North Kyūshū; they are comparatively numerous in the middle phase and rare in the late phase. In type they conform to the dolmens of South Korea checkerboard type 碁盤式, a cover stone supported by a number of boulders, as contrasted to the table dolmens prevalent in North Korea. The Kyūshū specimens are of a very ordinary size when compared to the South Korean dolmens which are very often combined with stone cists. However, the principle of 'lineage tombs'(?) or, at least, several burials under one dolmen is found there too.

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SHIBAYAMA BURIAL-MOUND GROUP 芝山古墳群 *AJ*, 9(1965): 107

Location: Chiba prefecture 千葉縣, Yamatake county 山武郡, Shibayama burial-mound group.

Date: 25 February–4 March; 28 March–4 April; 28 April–7 May.

Participants: Takiguchi Hiroshi, Burial-mound Research Group of Waseda University, Tōkyō.

Reporter: Tamaguchi Tokio.

The area of the abandoned Futagawa settlement 泪二川村 near Shibayama village is dotted with about 400 burial mounds. The two southernmost structures of this group, locally known as *tonozuka* 殿塚 (the lord's mound) and *himezuka* 姫塚 (the lady's mound) were studied (Fig. 10).

The *tonozuka* has an overall length of 88 metres, frontal width (square annex) of 48 metres and a height of 10·4 metres (measured from the moat), it is the largest of the group. Since the moat appears to have been filled in to the extent of 1·5 metres, the original height of the mound may have been 13 metres. The apex of the annex is at present 36 centimetres lower than that of the mound. This mound is of the keyhole-shaped variety. It was originally surrounded by a double moat and an earth-wall. The moat is still clearly visible on the west and north sides, but has been levelled by farming in the south.

Its floor level is natural loam and the stone chamber is located in its south part. The four walls and the ceiling are made of sandstone; the ceiling had already fallen in. There is no clear indication of a passage. The dimensions of the chamber are: length 2·74 metres, width of the entrance wall 2·5 metres. It is divided into front and rear parts by a stone partition. The whole chamber is painted cinnabar red. Its funeral furniture which is found mainly in its rear part consisted of 1 large curved bead (6 centimetres), 4 large glass beads, 5 medium-sized beads, some tens of small beads, 5 amber beads, 6 gold rings, 8 gold-copper bells, 5 iron swords, 1 dagger, several tens of iron arrow-points, 3 bronze bowls.

Behind the apex of the mound were found several cylindrical haniwa in their original arrangement. The figurative haniwa arranged on the step midway to the mound's summit were discovered in the moat into which they must have rolled by the steep incline from the ledge, where they originally stood. From the moat

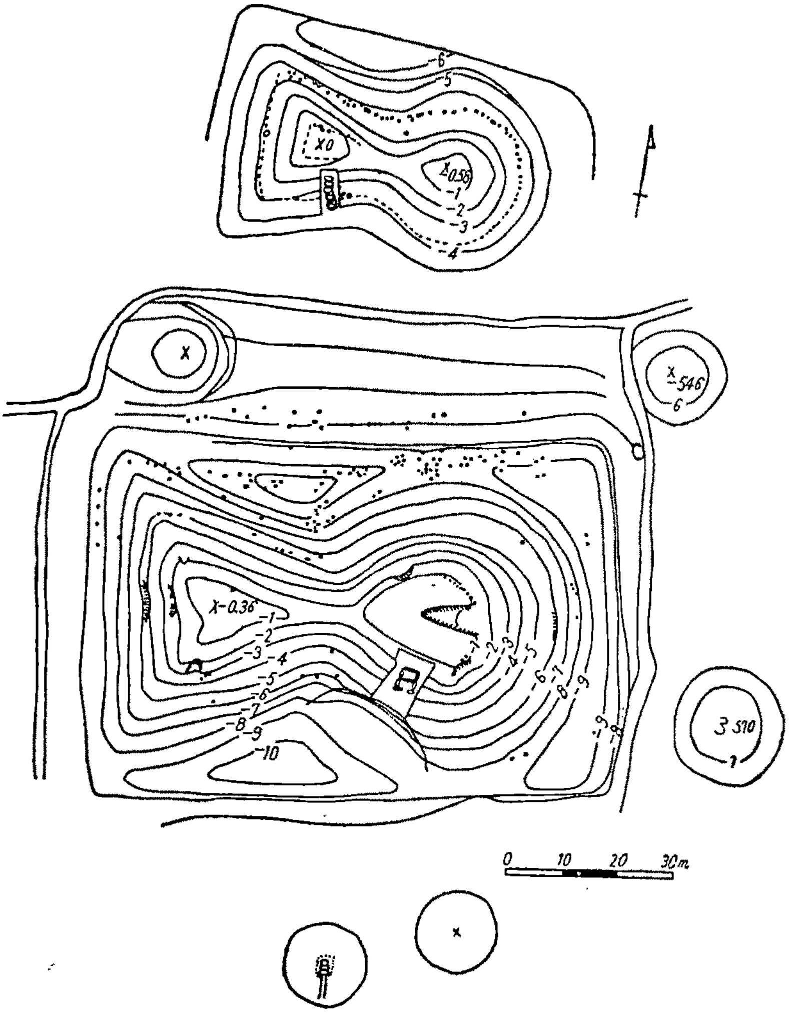


FIG. 10. Shibayama burial-mound group.

surrounding the square annex, fragments of the haniwa collected were horse, dog, cattle, deer and boar. In the moat surrounding the mound were mostly haniwa of aquatic birds, wild ducks and hawks. Broken house and utensil-shaped haniwa (arrow-cases, armour) were found in the area between the mound and the square annex. Many fragments of anthropomorphic haniwa were also found in the moat. Ordinary cylindrical and trumpet-shaped cylindrical haniwa are buried at intervals of one metre in the north part of the earth-wall; in their midst were two strangely shaped anthropomorphic haniwa.

The *tonozuka* is surrounded by a group of small burial mounds which have been numbered in the following way

Northwest	3	Northeast	4
Southeast	6	Northwest	5
Southwest	7		

They are all greatly damaged by agricultural work, but sandstone fragments are reported from No. 4, iron swords from No. 5.

Mound No. 7 was discovered 40 or 50 years ago when the stone chamber fell open. The long axis of the chamber extends north-south. A sedimentary rock served for building material. Dimensions (at floor level): depth 2·5 metres, width 1·26 metres, height 1·7 metres. The far, right and left walls are constructed from one large stone each. One of three capstones which formed the ceiling is now missing. It seems that there was once a stone prop to keep the entrance wall from falling in. Two-thirds of the chamber are below ground level. The passage way, which has a sandstone wall but no cover, slopes up from the chamber. This form of structure may have been resorted to for lack of suitable stone material.

West of mound No. 7 are burial mounds 9, 10, 11 which have not yet been investigated.

The *himezuka* lies parallel to the *tonozuka*. It is also keyhole-shaped and surrounded by a single moat and an earth-wall. Its dimensions are: length 58 metres, width of the square annex 35 metres, width of the mound 36 metres, height of the annex summit 4 metres; the summit of the mound is 58 centimetres lower. However, since the mound makes use of a natural slope, it appears to be 10 metres high. The stone chamber was found in the south part of the square annex. Its entrance is reached by a passage 3 metres long; it has a vaulted appearance, for two boulders were hollowed out on the underside and fitted into position. The walls of the chamber are made of well-fitting sandstone slabs and the side walls slope to form a vault 1·4 metres wide at floor level diminishing to 7·8 centimetres at the ceiling. The floor is paved with irregularly shaped sandstone slabs. The funeral furniture contained the following items: 4 curved agate beads, 2 crystal beads, 3 amber beads, 6 gold rings, fragments of 2 large gilded (inlay?) swords, more than 10 iron swords, 1 dagger, 4 spherical gold ornaments, several gilded ornaments, several tens of iron arrow-heads and nails, 2 Sue vessels.

The haniwa placed on the central step running the whole length of the mound were found undisturbed. Ordinary cylindrical haniwa were arranged along the south part of the square annex with 2 trumpet-shaped cylindrical haniwa interspersed. A distance of over 50 metres from the north part of the square annex and around the mound, is set off with a row of figurine haniwa. Their arrangement is as follows: 1 anthropomorphic haniwa, 4 horses with one male human figure each, 2 anthropomorphic haniwa presumably representing guards, a group of male haniwa (one with a *koto* 琴 across his knees), 5 female haniwa figures and, at the far end of the row, one more male anthropomorphic haniwa. From the trench dug into the central step one male naked haniwa doing obeisance was recovered.

The upper bodies of all these anthropomorphic figures are well made and some have very interesting facial features. The haniwa accompanying the *tonozuka* are so different from those of the *himezuka* that a chronological gap, or manufacture by another group (of potters?) may be assumed.

NOTE: This site is important because original and undisturbed haniwa arrangements are very rarely found.

ICHIGAO SITE 市ケ尾遺跡群 *AJ*, 9(1956): 110

Location: Kanagawa prefecture 神奈川縣, Yokohama city 橫濱市, Kohoku ward 港北區, Ichigao site 市ケ尾.

Date: 15 June–5 September.

Participants: Gōtō Shūichi, Wajima Seiichi, Ishino Akaboshi Naotada, Naito Akira.

Reporter: Wajima Seiichi.

Ichigao site is the collective name for two groups of horizontal stone-chamber tombs and a settlement site on the Shikagaya 鹿ケ谷 plateau. This investigation set out to ascertain whether burial and settlement sites were related.

Ichigao stone-chamber group. The 20 horizontal tombs in this group were divided into three types, A(12), B(7) and C(1). [Not defined in detail, but type C is mentioned in the following report—*Translator.*] Although types A and B show typological differences, they appear to be contemporaneous. The funeral objects recovered were straight swords, daggers, beads, copper rings, Haji and Sue ware. The arrangements of a part of the funeral furniture in front of the tombs and, in subsequent excavation of these areas, the existence of a ritual forecourt (in 2 typological varieties—also not defined) was established.

Ōba-machi 大場町 *stone-chamber group.* This consists of 9 tombs of type A and one of type B. Several burial mounds are found on the plateau above them.

Shikagaya dwelling site. By boring holes and cutting trenches it was possible to get a reasonably clear idea of the scope of the settlement, its structure and the nature of its individual dwellings. No extensive excavation was possible because the whole area is under cultivation. Six dwellings of the Yayoi Period and eleven of the Burial-mound Period were identified. The Yayoi dwellings were associated with either barrel-shaped 樽式 pottery of North Kantō 北關東 (index type pottery of the late Yayoi phase in North Kantō) or the Kugahara 久ケ原 pottery of South Kantō 南關東 (index pottery from earliest to former half of the late phase in South Kantō). Four pit-dwellings were found to be contemporary with the horizontal stone-chamber tombs and dated Mama Period 眞間 (later half of the middle phase).

Report on type C stone chambers, p. 111, by Ishino

Road construction in the past has cut off part of the passage. There is no apparent ante-room or clear demarcation towards the chamber. The width and height of the passage appear to increase towards the interior. Its height is 1·1 metres, width 95 centimetres; at the far wall of the chamber its height is 1·1 metres, the width 1·29 metres. A step 20 centimetres high stands at the 1·60 metres mark of the present passage length (it accounts for the increase in height). The passage is paved with 14 pebbles and the chamber with 29.

NOTE: Ishino ends his report with a reference to the identity of the tombs with the recent and present-day turtle-shaped 龜甲 or house-type 家形 tombs of the Ryūkyūs (also horizontal stone-chamber type), in particular the existence of an enclosed ritual forecourt used for funerary and post-funerary rites. (In the Ryūkyūs the Ancestor's New Year on 16 January and other local festivals are celebrated by a feast and merriment in front of the lineage tomb by all the members of the lineage.)

Although the structural and functional parallels are striking, one should guard against seeing the Ryūkyūan tombs as a derivation from Japan. The Ryūkyūan tombs, as described above, were introduced from South China at a time not at all comparable with the early date of the above Japanese tombs. This applies to all other megalithic structures in the Ryūkyūs (dolmens, terrace tombs, stepped tombs, menhirs, prestige tanks) so far as I have seen, though they are allegedly of Japanese derivation, because they resemble the Korean/Japanese type(?) of megaliths. However, since there is a gap of about 1,000 years between them, a genetic relationship is unthinkable. Typological and chronological affinities exist with areas to the south of the Ryūkyūs.

KAMIODA BURIAL MOUND 上小田古墳 *AJ*, 9(1956): 120

Location: Hiroshima prefecture 廣島縣, Asa county 安左都, Kōyō-machi 高陽町 Kamioda burial mound.

Date: 11 February; 45–17 February.

Participants: Matsuzaki Toshikazu, Kinoshita Tadashi, Shiomi Hiroshi, Kimma Gōsho.

Reporter: Matsuzaki Toshikazu.

The mound is on a foothill (elevation 10 metres) near the mouth of River Ota 大田. The mound itself is now 5 metres high but, as it has been under cultivation and its soil removed leaving the stone coffin exposed, its original height and shape are conjectural. The long axis of the coffin extends east-west. Its wrapper of bluish clay is 30 to 40 centimetres thick. A layer of gravel was laid out around the head part of the coffin (east) and the funerary furniture found arranged either on this gravel,

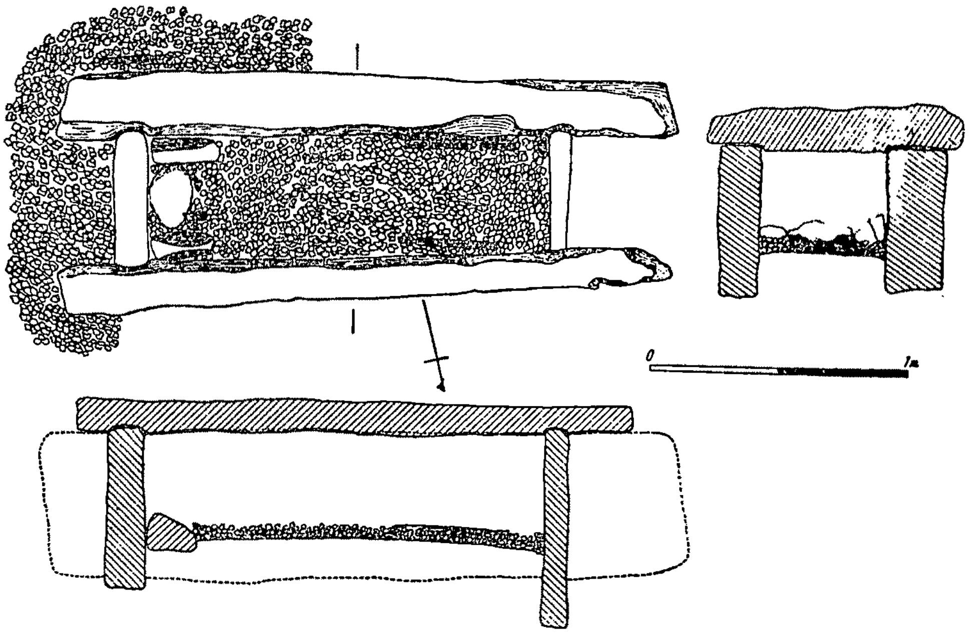


FIG. 11. Kamioda burial mound. Stone coffin.

or within the clay wrap. The coffin is the fitted type, with the long sides protruding 30 centimetres fore and aft. Its sides are dovetailed. The cover is in one piece. In the east part of the coffin were three natural stones (to serve as pillow stones?). The superior maxillary bone and several teeth were found there. The bottom of the coffin is a layer of pebbles (4–5 centimetres) mixed up with cinnabar (used widely for funerary purposes until recently). At the south wall at the foot were found 1 iron sword, 1 sabre and 1 sickle; another iron sword was near the opposite wall and an iron axe stuck into the pebbles in the southwestern corner. The swords within the coffin were wrapped in cloth, whereas the sword outside the coffin may have had a wooden sheath. This mound is to be dated to the middle phase of this area.

HIROSAWA BURIAL MOUND 廣泥古墳 *AJ*, **9**(1956): 114

Location: Kyōto city 京都市, Ukyō ward 右京區, Sagano 嵯峨野, Hirosawa burial mound 廣沢古墳.

Date: 20 February–6 March 1956.

Participants: Higuchi Takayasu, Ishibe Masashi, Suzuki Shigeharu.

Reporter: Higuchi Takayasu.

The northwestern part of the Kyōto plain, where River Hozu 保津 enters it, is rich in burial mounds with horizontal stone chambers. The present structure is situated south of the Hirosawa High School, Nishiura-machi 西裏町. The mound is destroyed to the extent that the stone chamber is exposed. It was probably originally a round burial mound (diam. 30 metres, height over 4 metres). The entrance of the stone chamber faces south. Its overall length is 12 metres, that of the chamber 4·3 metres. The width at the far wall measures 2·3 metres. The passage is no narrower than the chamber, but its height lower. The natural slope of the ground is made level by a layer of yellowish clay which also fills spaces between the wall stones. The chamber has a paved stone-slab floor. A house-shaped coffin appears to have been deposed near the far wall; at present only fragments of its cover are preserved. The chamber was silted up with soil and sand, due to some missing capstones, and because it was used for subsequent burials. Sue ware (footed dish, long-necked jar, covered jar of a late phase) was found arranged in the northeast corner of the chamber and on the floor of the passage (Fig. 6, p. 37). In the southwest corner a second burial, cremated remains and a few small Sue flasks, pots, Haji plates, iron nails and, nearby, old coins were found. A third burial was probably placed near the entrance to the chamber, accompanied by a layer of small red plates. Since no skeletal remains were found there, this may possibly be an altar. Cases of stone chambers being used for burials or as shrines in historical times are numerous.

TAKEHARA BURIAL MOUND 竹原古墳 *AJ*, **9**(1956): 123

Location: Fukuoka prefecture 福岡縣, Kurate county 鞍平郡, Wakamiya-cho 若宮町, Takehara burial mound.

Date: 24–29 March 1956.

Participant and Reporter; Mori Teijirō.

The site is on the central course of River Onga 遠賀 at the confluence of the Rivers Inunaki 犬鳴 and Yamaguchi 山口 and within the grounds of the Suwa shrine in Kami-Takehara (Fig. 12*a*). The summit of the mound is 5 metres above the surrounding country, itself 7 metres above sea level. Although the eastern half of the structure has been completely levelled, its overall length of 30 metres would suggest a small keyhole-shaped type. When the site was discovered in 1956, the Education Committee was called in to do research and preservation: the site was declared Cultural Property in the following year.

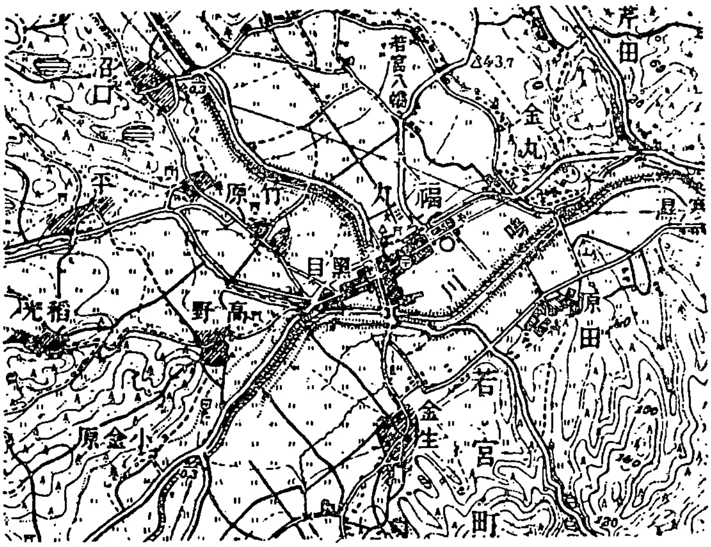


FIG. 12*a*. Takehara Burial Mound.

The mound is built over a horizontal vaulted chamber (2·2 metres by 2·7 metres) with passage, anteroom and short corridor (overall length 6·7 metres; Fig. 12*b*). Though the chamber had been robbed, we could see that burials had been disposed along the far and right walls. A ceremonial sword, mortar, bridle-bit, crupper and other ornamental horse trappings, all of late Burial-mound Period formed the funerary furniture. Further items were: 1 pair of gold rings, 1 pair of silver rings, curved beads of crystal and quartz, 4 large green glass beads, 3 glass beads (light yellow or green) 2 amber beads, 25 glass beads (mauve), 9 silver bells, pure gold thread 10 centimetres long, diam. 1·5 millimetres, copper thread, gilt-copper sword ornaments, 2 sword pommels, one small part to keep in place the sword-guard, etc.

The far wall of the chamber displays an interesting mural 壁畫 which forms a triptych with the murals on the lower halves of the entrance stones to the anteroom, when seen from a distance. Red sparrows, drawn in black and ochre, are still clearly recognized on the right side, although they were covered with black soil and badly damaged when discovered. Their style and execution, as well as the motif itself, strongly recall the murals in Koguryo 高句麗 (Korea) tombs. The mural on the left side, painted on to a rough andesite boulder, is so damaged that its presence is barely noticeable.

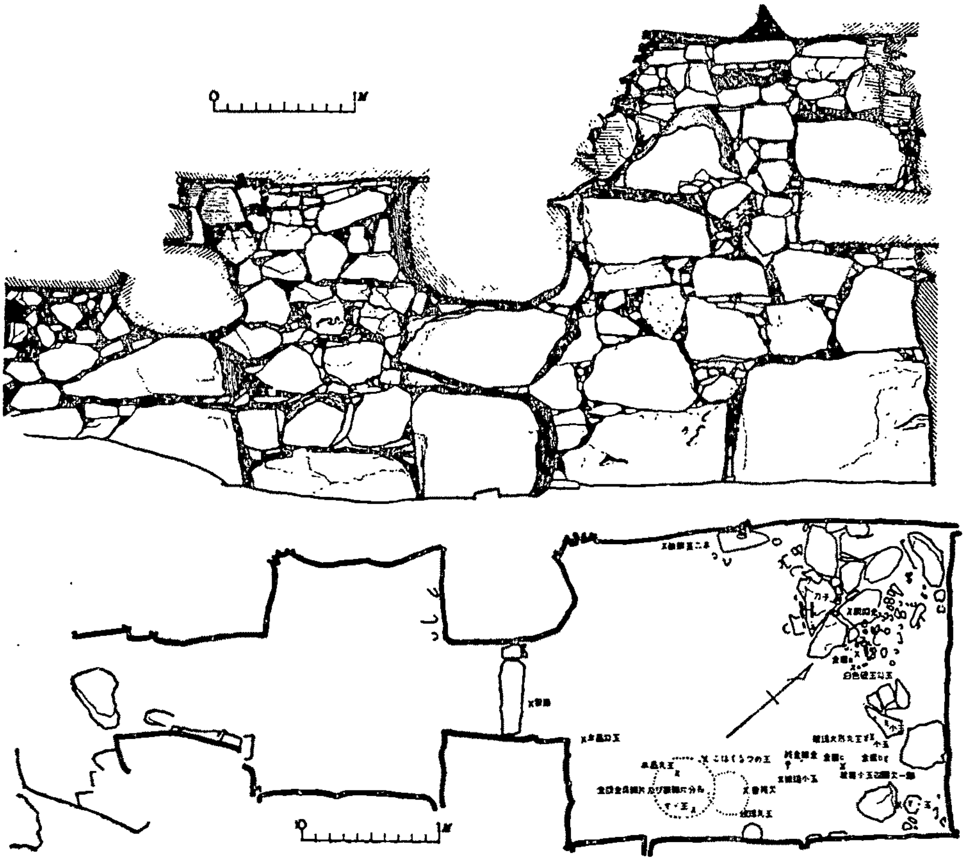


FIG. 12*b*. Profile and ground-plan of the stone chamber.

The mural on the far wall is 2 metres long, 1·4 metres high, and is painted on chlorite schist. Black and red pigments were dissolved in oil and the painting very skilfully executed with pointed and flat brushes.

In the mural are ritual fans (signs of rank) on both sides of the foreground. A fabulous animal 騎竜 (half-horse, half-dragon), of a kind also known from Manchurian and Koguryo tombs, occupies the centre. The claws of the animal, each drawn in one bold brush stroke, and the spiky tail have further striking parallels in Koguryo murals. Great care seems to have been taken in drawing the human figure in the lower left corner; details like hat, hair-style and shoes are clearly recognizable, but eyes and nose appear to have been left out. A horse, two boats and 'bunting' on the right side, complete the motifs represented on the mural. At the end, towards the base, are two pairs of wave-like ornaments, which to the reporter did not look like sea (Fig. 12*c*).

NOTE: Single Koguryo stylistic elements and motifs had been found in several burial-mound murals, but never before had they been found in such concentration and such faithfulness on Japanese soil.

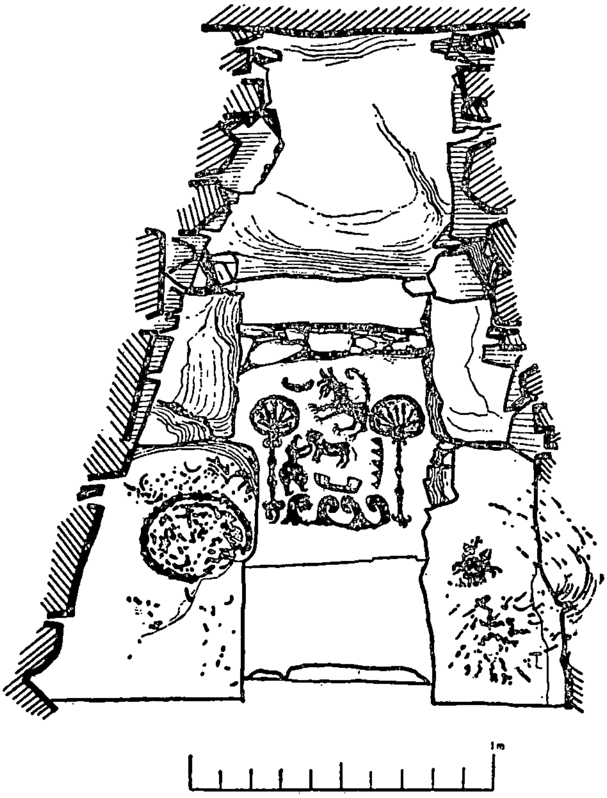


FIG. 12*c*. View of the interior seen from the anteroom entrance.

Yonmanki Burial-mound Group 四方騎古墳群 *AJ*, **10**(1957): 112

Location: Ibaraki prefecture 茨城縣, Niiharu county 新治郡, Yonmanki burial mound group.

Date: 22 February–12 March.

Participants: Yoshida Shoichirō, Hirose Eiichi, Kurata Yoshirō, Kato Shinpei.
Reporter: Kurata Yoshirō.

Many smaller round burial-mounds are to be found on a chain of foothills which extends fanlike to the south near the west coast of Lake Kasumigaura 霞ケ浦. Since the area was to be built up, a salvage operation was decided upon and four burial mounds investigated (Fig. 13).

No. 1: East-west extension 21 metres, north-south extension 24 metres. Surrounded by moat, stone chamber facing south, but already robbed.

No. 2: diam. 22 metres, stone chamber facing southeast, robbed.

No. 3: diam. 23 metres, stone chamber facing south, robbed.

No. 4: West-east extension 29 metres. North-south extension 25 metres. Stone chamber facing west-south-west, robbed and destroyed, but part of the far and one other wall left.

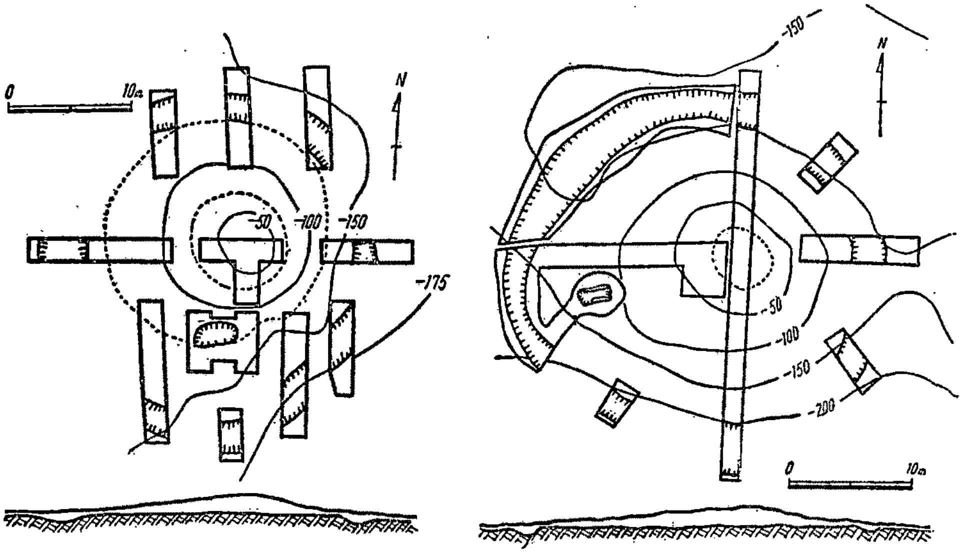


FIG. 13. Yonmanki burial group. Mounds 1 and 4.

MATSUNOKI BURIAL MOUND 木公木古墳 *AJ*, **10**(1957): 113

Location: Hiroshima prefecture 廣島, Kamo county 賀茂郡, Matsunoki burial mound.
Date: 18–31 August.
Participants: Shiomi Hiroshi, Matsuura Nobutaka, *et al.*
Reporter: Shiomi Hiroshi.

It is situated on a hillock (60 metres) near the upper course of River Numata and to the west of the plateau summit. It is a round mound with a diameter of 8 metres and a height of 60–70 centimetres. East of the mound (area 20 metres long and 5–6 metres wide) stone cists were reported by Matsuura. In all, 8 stone cists and 2 earth pits with stone covers were found.

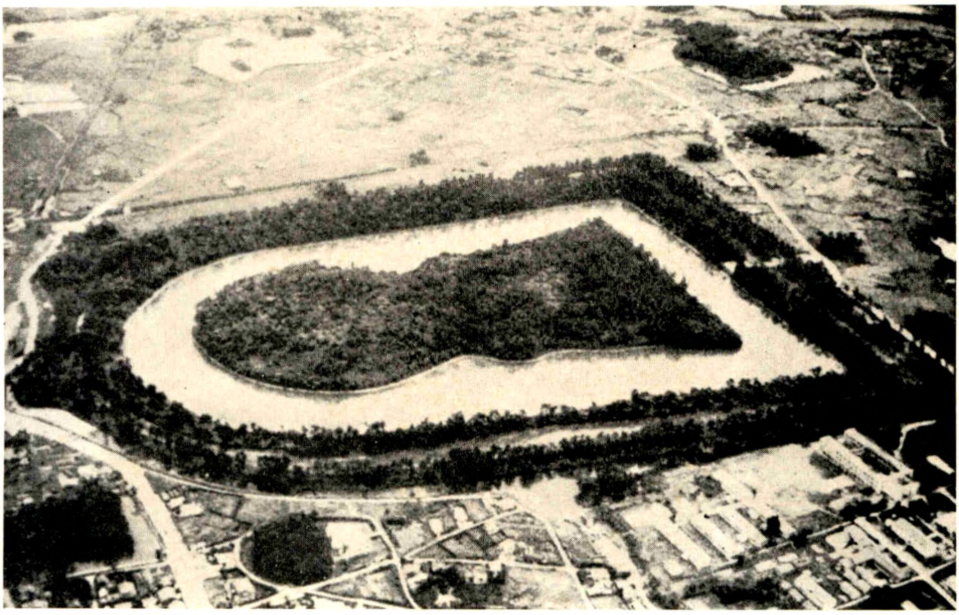
Cist No. 1: length 1·2 metres; width (east) 32 centimetres, (west) 17 centimetres; depth 25 centimetres; covered with 5 stones.

Cist No. 2 was found in the centre of the mound. Cover, east and west walls are missing. Length 1·03 metres; width (east) 30 centimetres, (west) 20 centimetres; depth 25 centimetres.

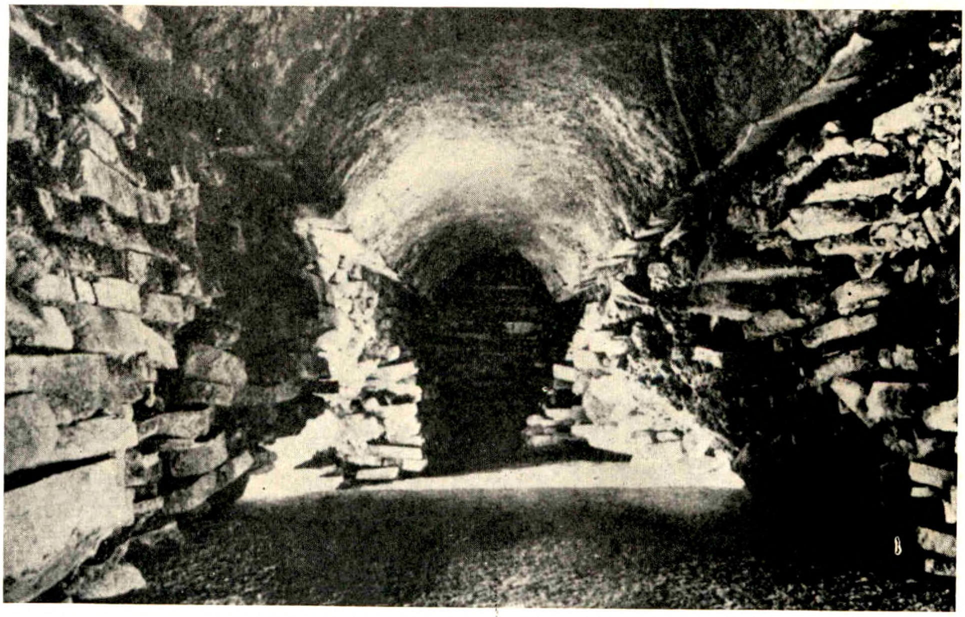
Cist No. 3: length 1·2 metres, width (east) 30 centimetres, (west) 20 centimetres; depth 25 centimetres.

Cist No. 4: length 70 centimetres; width (east) 38 centimetres, (west) 30 centimetres; depth 30 centimetres. Covered with 4 stones.

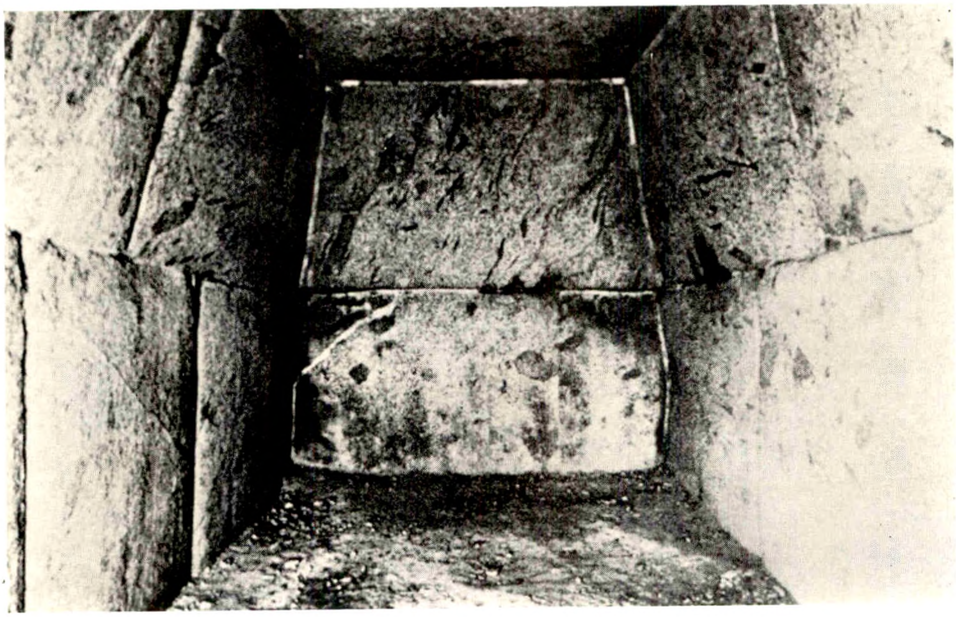
Cist No. 5 lies parallel to cist No. 4. Length 88 centimetres; width (east) 47 centimetres, (west) 17 centimetres; depth 30 centimetres. Two of the cover stones preserved.



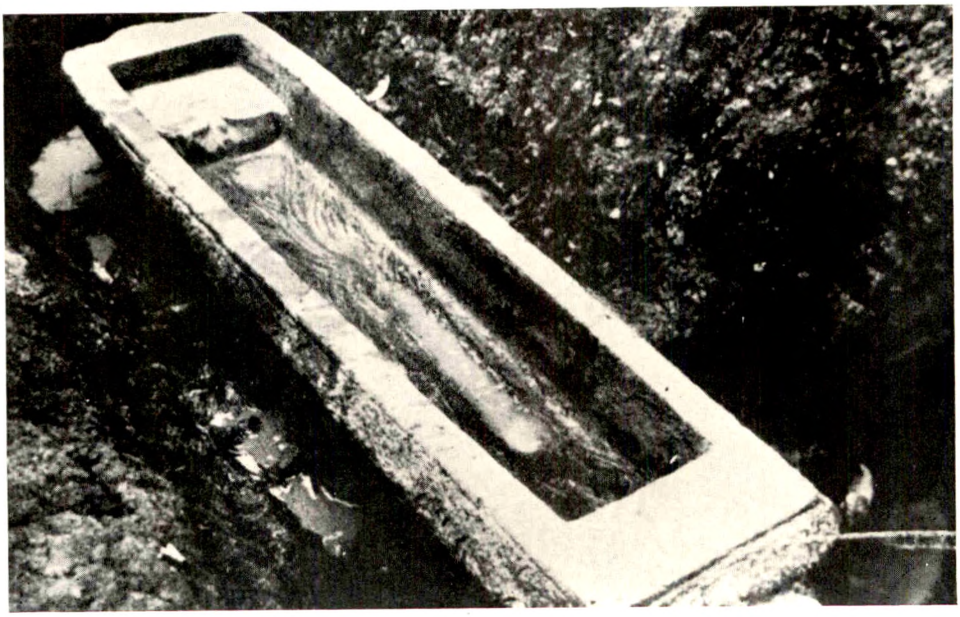
a. Keyhole-shaped burial mound of Nintoku Tennō (A.D. 313–399). *Sekai kōkogaku taikei*, **3**: pl. 4. See page 39



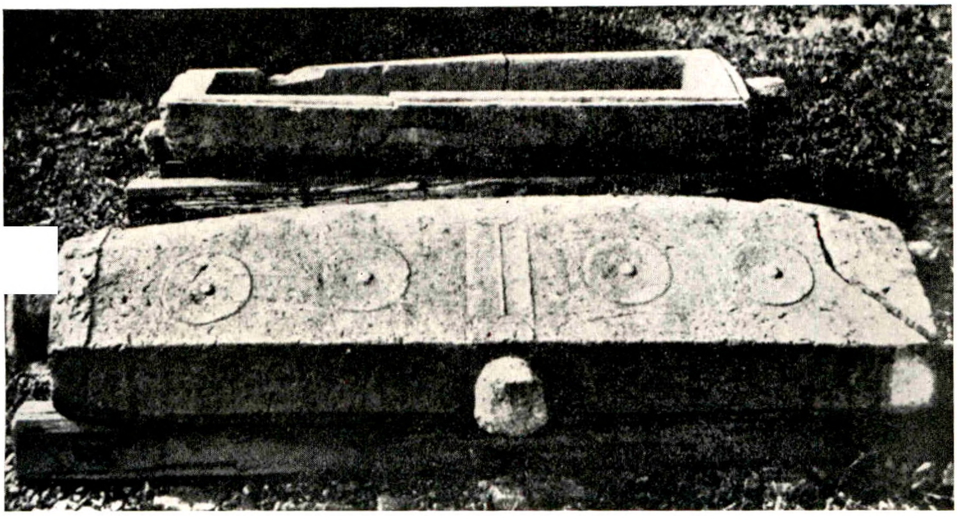
b. Vertical stone chamber. 4th century. *Ibid*. **3**: pl. 6. See page 40



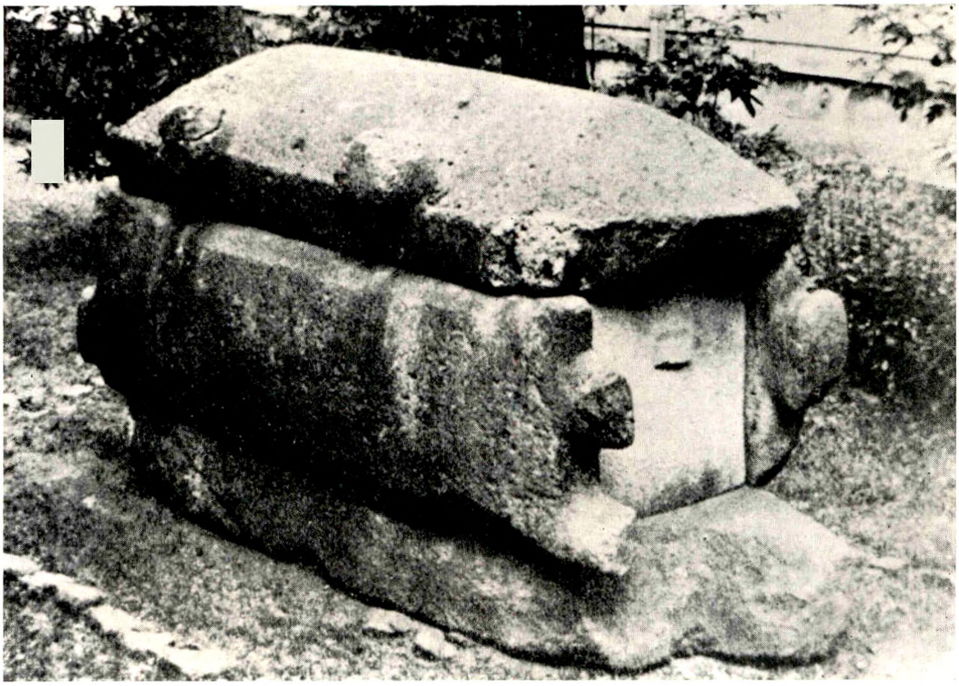
a. Horizontal stone chamber. 7th century. *Sekai kōkogaku taikei*, **3**: pl. 17



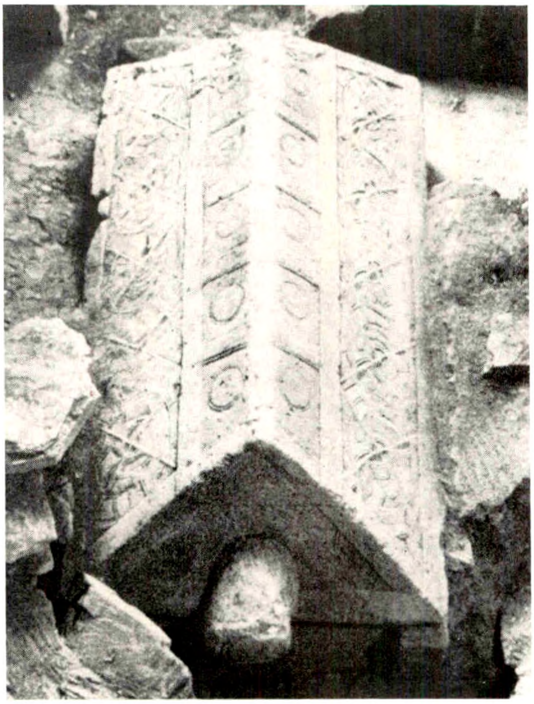
b. Split-bamboo or log-type coffin. 4th century. *Ibid.* **3**: pl. 18. See page 41



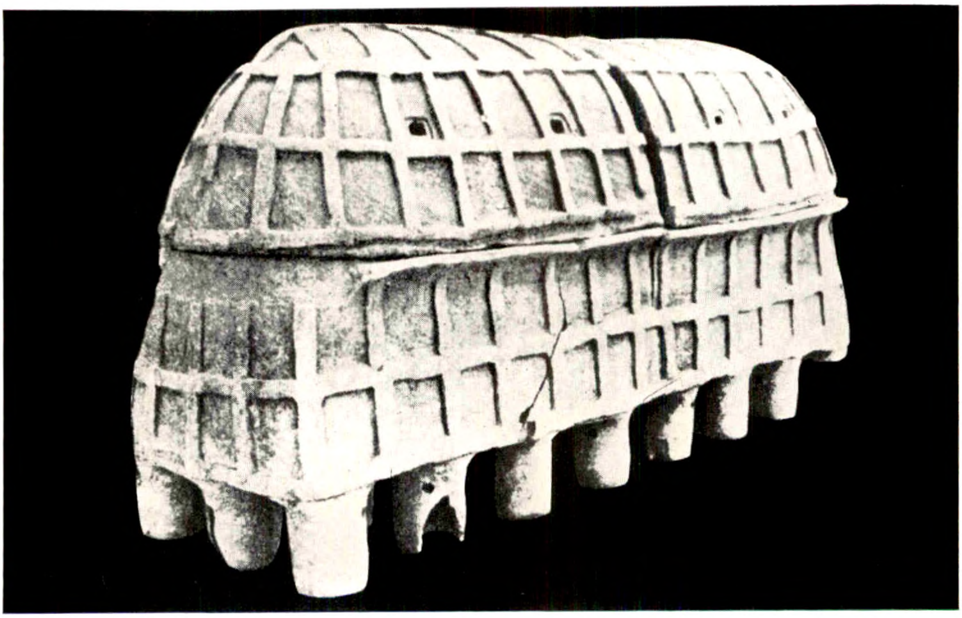
a. Boat-shaped coffin, 230 cm. long. 5th century. *Sekai kōkogaku taikei*, **3**: pl. 20



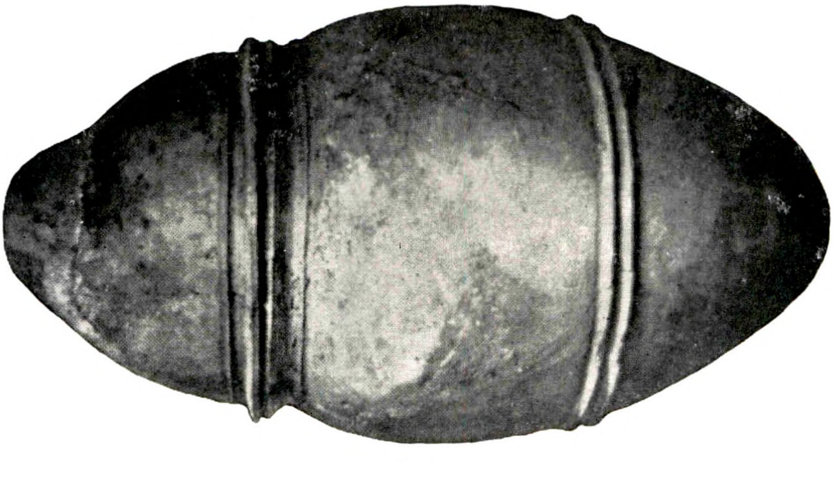
b. Oblong chest-type coffin, 240 cm. long. 5th century. *Ibid*. **3**: pl. 21. See page 41



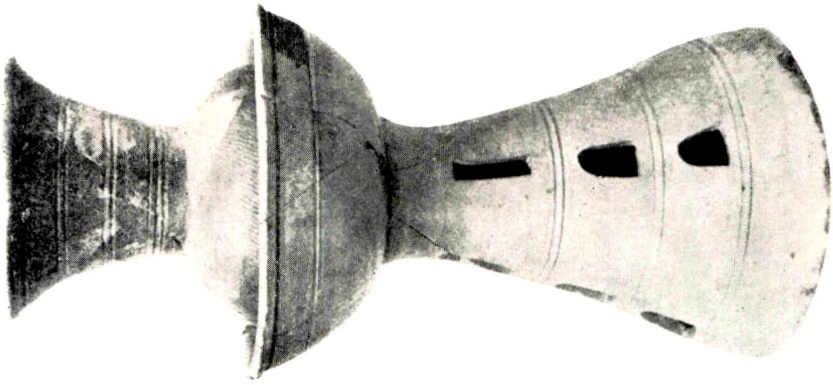
a. House-type coffin. 5th century. *Sekai kōkogaku taikei*, **3**: pl. 10



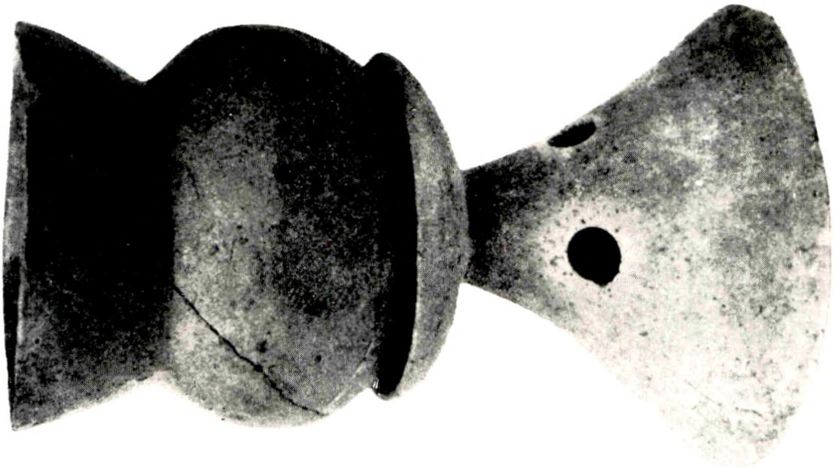
b. Clay coffin, 208 cm. long. 7th century. *Ibid.* **3**: pl. 26. See page 42



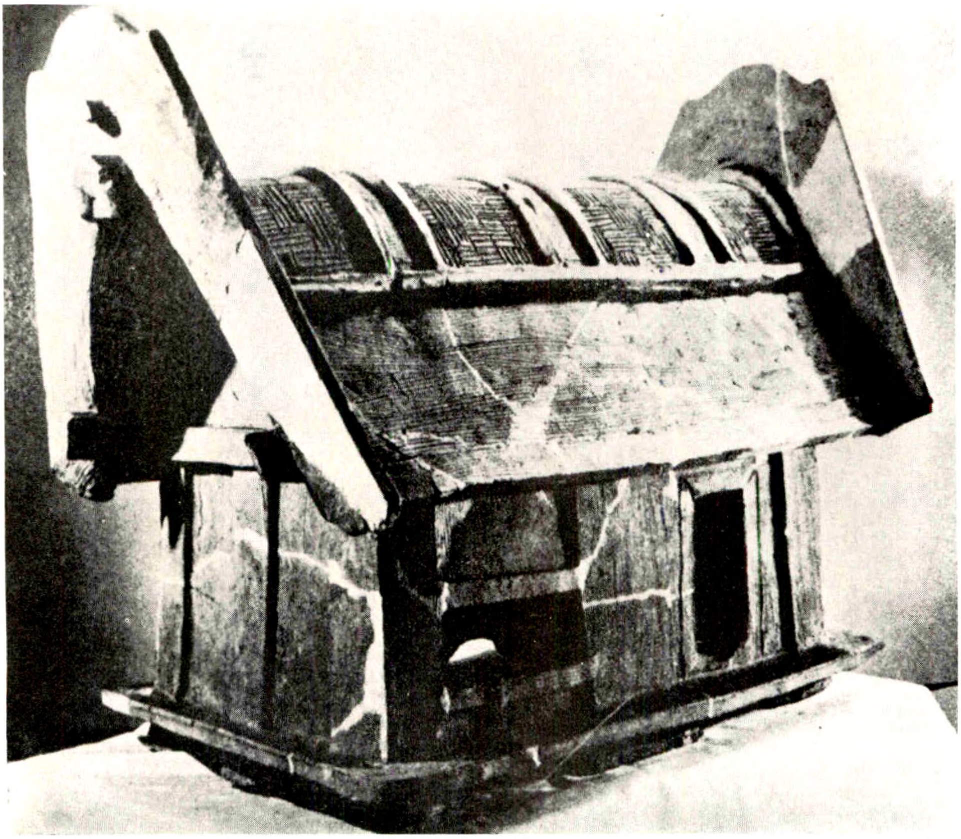
a. Composite burial-jar, Fukuoka prefecture, Nozoe. *Sekai kōkogaku taikei*, Nihon, **2**(1960): 25. See pp. 28, 56



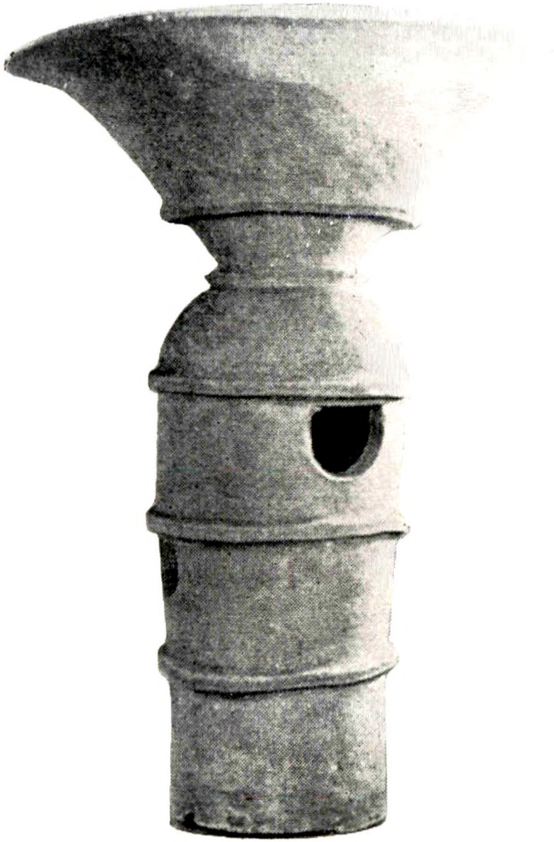
b. Sue jar on stand, 67 cm. high. 6th century. *Ibid.* **3:** pl. 189. See page 44



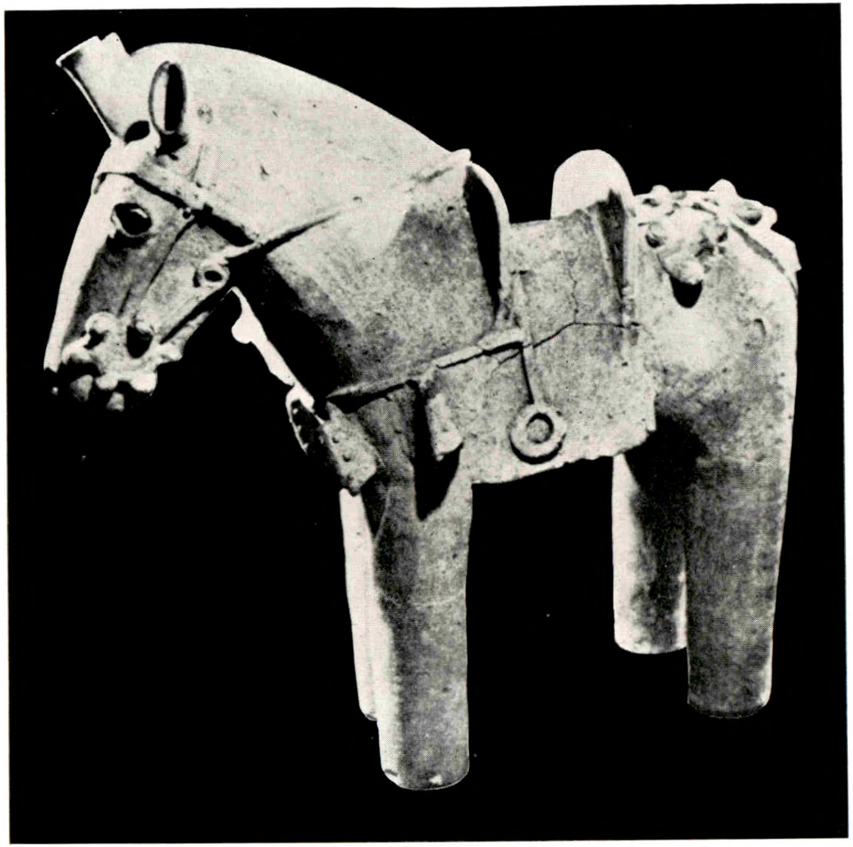
c. Haji pot on stand, 16.3 cm high. 4th to 5th century. *Ibid.* **3:** pl. 180. See page 43



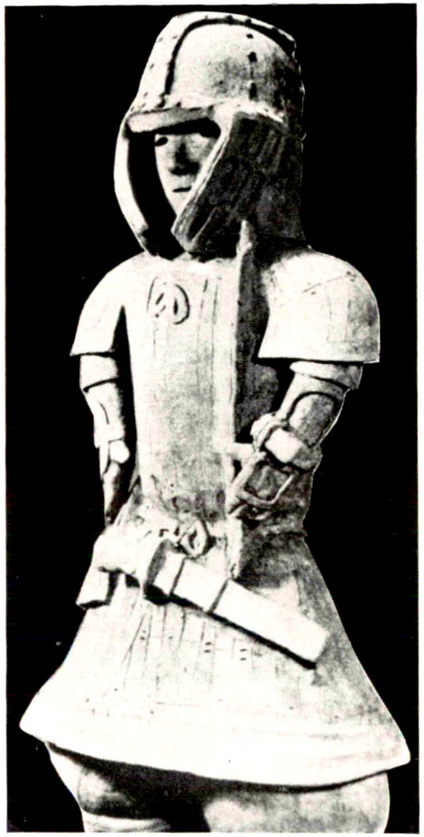
House-shaped haniwa, 53.2 cm. high. 5th century; see p. 46. *Sekai kōkogaku taikei,* **3:** pl. 35



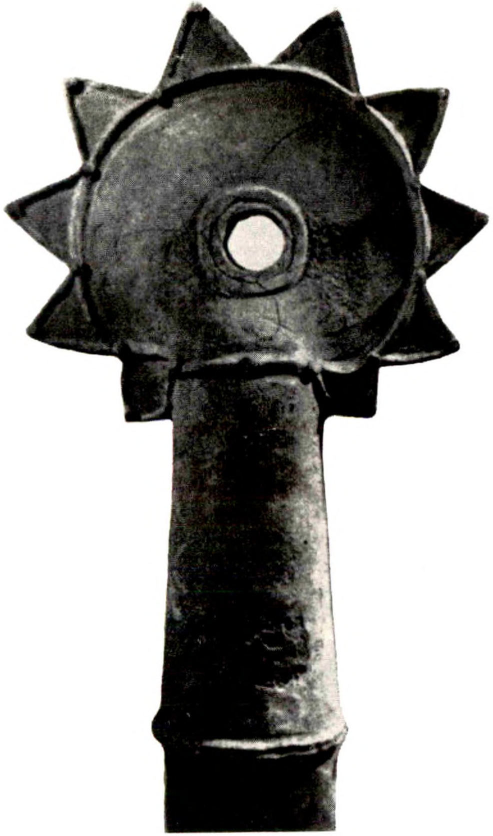
a. Trumpet-shaped cylindrical haniwa. See p. 46. *Sekai kōkogaku taikei*, **3:** pl. 339



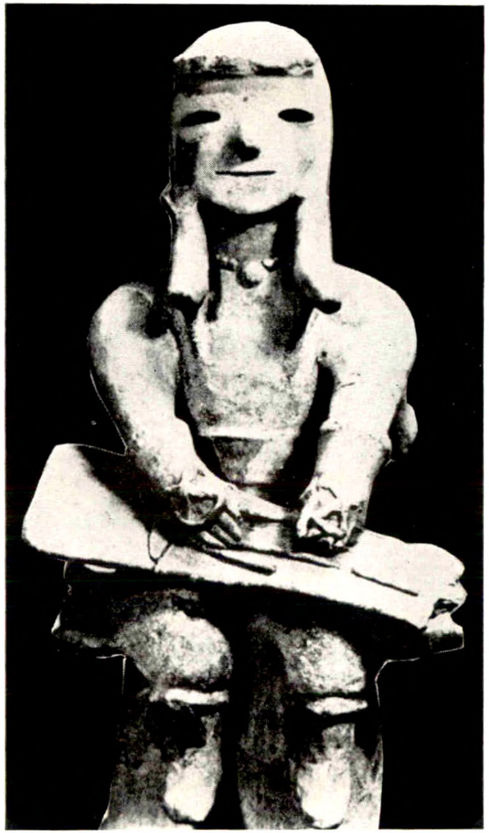
b. Horse haniwa, 85 cm. high. 6th century; see p. 46. *Ibid*. **3:** pl. 40



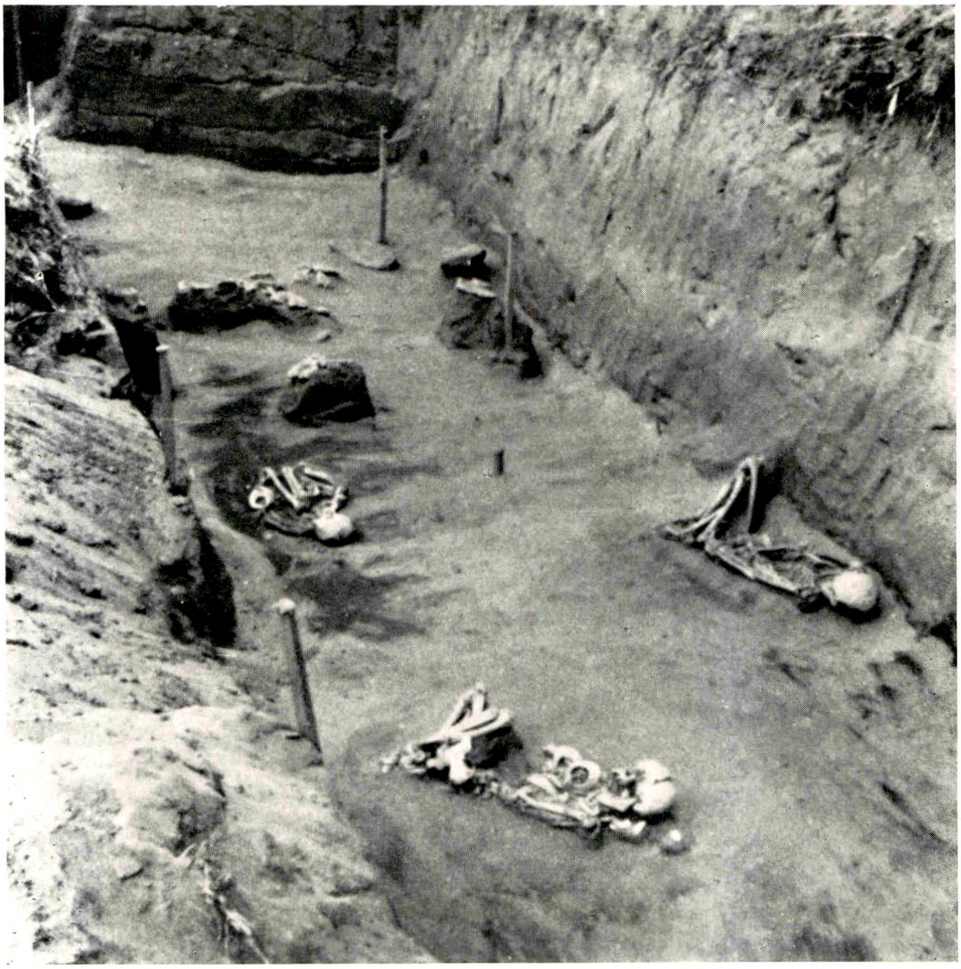
a. Anthropomorphic haniwa: a warrior, 136 cm. high. 6th century. See pp. 28, 56. *Sekai kōkogaku taikei*, **3**: pl. 44



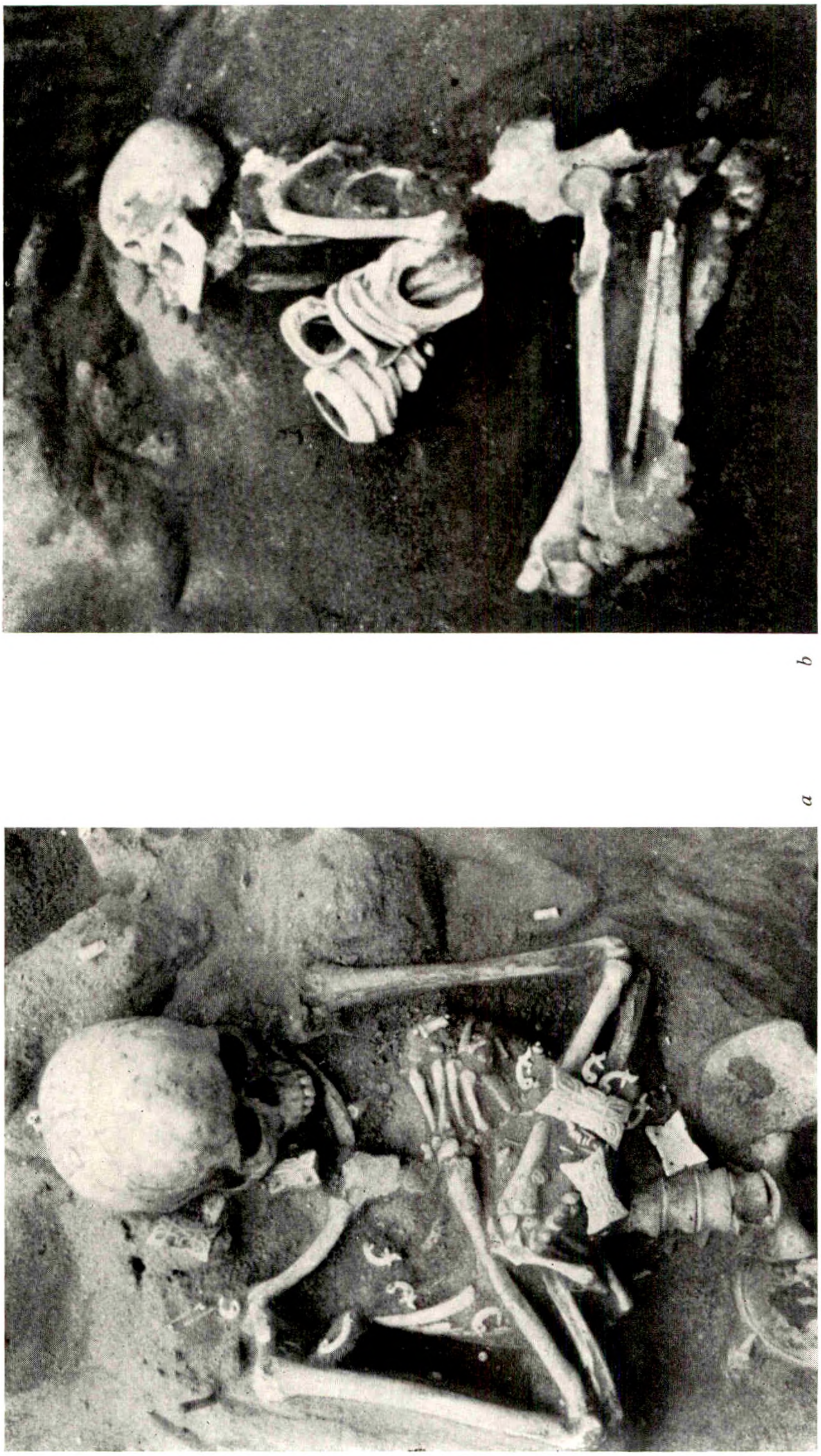
b. Utensil-shaped haniwa: a ritual fan, 100 cm. high. See p. 44. *Ibid.* **3**: pl. 39



c. A *koto* 琴 (lyre) player, 72.6 cm. high. See page 46. *Ibid.* **3**: pl. 50

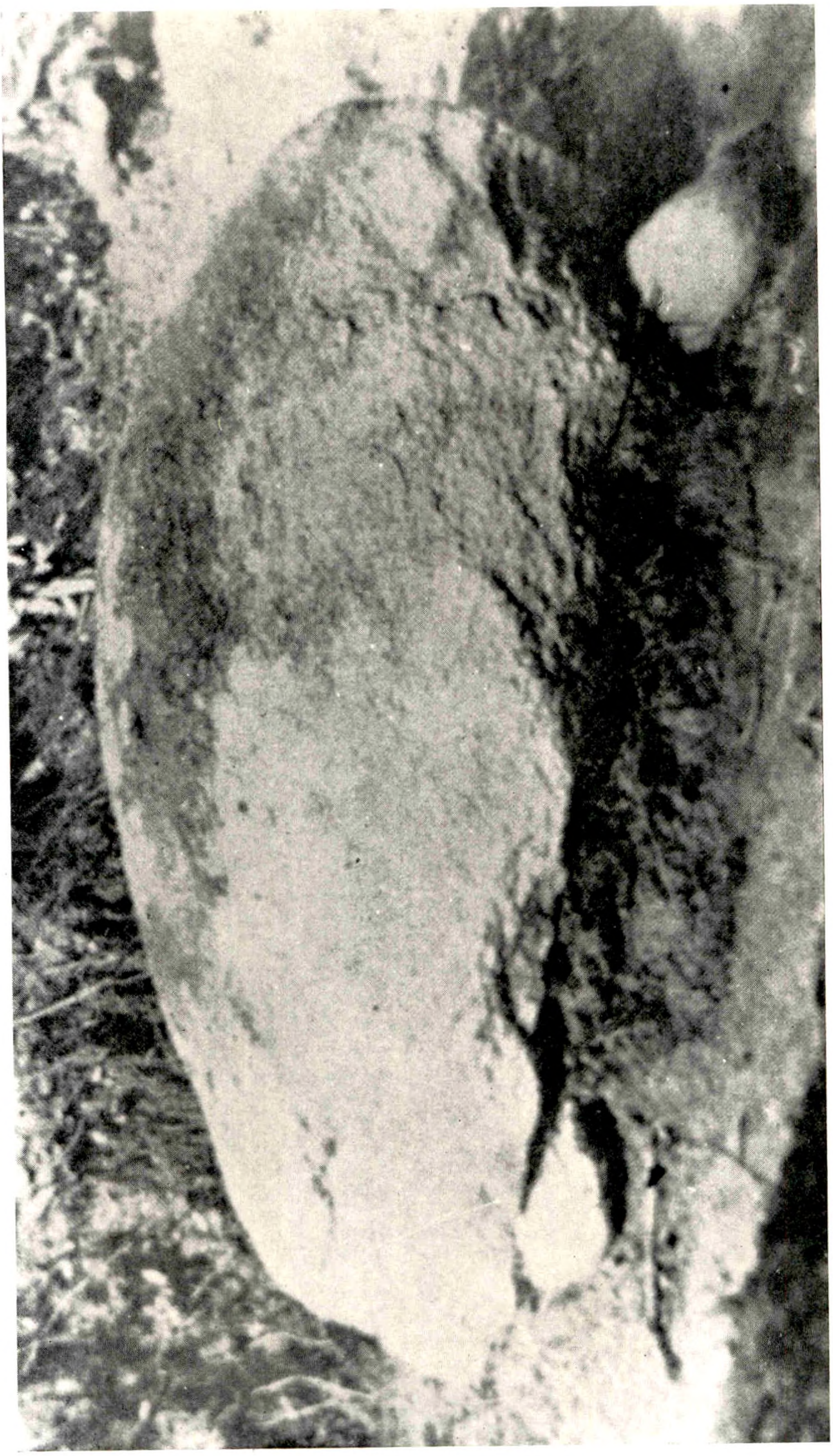


Tanegashima, Hirota. Yayoi Period burial area. See page 53.
Photo by Kanaseki Hiroshi. By courtesy of Kokubu Naoichi



a *b*

Tanegashima, Hirota. Yayoi Period burial area. See page 53. *Photos by Kanaseki Hiroshi. By courtesy of Kokubu Naoichi*



Saga prefecture, Hayamajiri dolmen site. *Sekai kōkogaku taikei*. Nihon, **2**(1960): 31. See page 55 and Fig. 9

Cist No. 6: length 72 centimetres; width (east) 30 centimetres, (west) 23 centimetres; depth 30 centimetres; 2 cover stones.

Cist No. 7 is situated on the edge of the slope. Length 90 centimetres, width (east) 47 centimetres, (west) 29 centimetres, depth 25 centimetres, 2 cover stones.

Cist No. 8: length 72 centimetres, width (east) 32 centimetres, (west) 20 centimetres, depth 25 centimetres, 2 cover stones.

Pit No. 1. Situated west of cist No. 6, it lies north-south. At a depth of 80 centimetres a cover of 6 stones was found; under it is a second cover, formed by three stones. Length 1·2 metres, width 30 centimetres, depth 25 centimetres. Its granite was quarried on the mountain.

Pit No. 2 has a single cover and a rectangular ground plan with rounded corners. Length 1·4 metres, width 30 centimetres, depth 30 centimetres.

On the eastern edge of the plateau an iron sword and an iron plane blade were found.

MIIKEDAIRA BURIAL MOUND 三池平古墳 *AJ*, **11**(1958): 119

Location: Shizuoka prefecture 靜岡縣, Ihara county 庵原郡, Miikedaira burial mound.

Date: 29 April—8 May.

Participants: Shizuoka University, Historical Institute, Archæological Institute of Meiji University, Tōkyō, *et al.*

Reporter: Otsuka Hatsushige.

It is situated on the crest of the mountain and belongs to the keyhole-shaped variety. Length of the square annex: 72 metres, mound diameter 40 metres, width of the square annex 38 metres, height of the annex 3 metres, height of the mound 4 metres.

Though its shape has already greatly changed, it can be dated to the early phase of the Burial-mound Period. A natural elevation was used. No haniwa was found. A belt of stones (7 metres wide) around the foot of the mound may have served as demarcation in lieu of haniwa cylinders. Apparently the belt originally also enclosed the annex.

A vertical stone chamber is built into the mound; length 2·85 metres, depth 80 centimetres, width 86 centimetres. The walls are constructed by piling up flat stones horizontally. A hollowed-out log-type stone coffin was found in the vertical chamber. Length 2·5 metres, width 75 centimetres with a cartridge-shaped cover. There are no projections for cording. Funerary furniture was found within the coffin and in the space between the coffin and the stone chamber walls. In the head part of the coffin we found: a Chinese Han mirror, a Sui mirror, 2 bronze items (function unknown, presumably a cane head), 2 stone spinning weights, 4 scallop-shaped stone objects. Outside, near the foot end of the coffin were: 10 large swords, 15 straight swords, 3 daggers, many iron arrow-heads, 6 iron axes, 2 sickles, 3 hoe blades, 2 plane blades, 2 iron sticks. Also inside the coffin were: 1 curved bead (glass?), 63 tubular beads, 197 small beads, 1 stone arm ring (steatite) one stone arm ring (jasper), one Japanese-made mirror imitative of a Chinese mirror, inferior quality.

NOTE: This burial mound represents an important type of burial mound and stone chamber rare in Eastern Japan (4th–5th centuries).

TAMAKIYAMA BURIAL MOUND 珠城山古墳 *AJ*, **11**(1959): 124

Location: Nara prefecture 奈良縣, Isoshiro country 磯城郡, Anashi 穴師, Tamakiyama burial mound.

Date: 4–24 January.

Participants: Kojima Toshitsune, Date Muneyasu.

Reporter: Date Muneyasu.

Tamakiyama is a foothill of Mt Anashi. Three burial mounds, all keyhole-shaped, were located here and were numbered Nos. 1, 2, 3, from east to west. Only Nos. 2 and 3 were investigated.

No. 2: Overall length 75 metres, square annex orientated west, width 40 metres, mound diameter 40 metres, mound summit 2 metres higher than its square annex.

No. 3: Overall length 47·5 metres. Square annex orientated to the east, width 25 metres, mound diameter 25 metres, the mound was 2 metres higher than the annex. No haniwa was seen. Horizontal chambers are found in both its front and rear parts. The chamber under the mound is now without capstone; the chamber length is 4·66 metres, the width 2·14 metres. It has a recess 50 centimetres deep on the east wall and another 40 centimetres deep on the west wall. The passage is 5·1 metres long and 1·1 metres wide. Towards its entrance it is closed with a pile of stones. The coffin may have been in the caved-in area in the centre of the chamber. The central part of the passage which is also stone-paved is partitioned off by a stone. There another coffin seems to have been deposed, as suggested by fragments. The dimensions of the stone chamber in the square annex are: overall length 8·1 metres, chamber length 4·42 metres, width 2·13 metres, height 2·5 metres. In the west wall there is a niche 66 centimetres deep.

The funerary furniture consisted mainly in horse trappings and ornaments. There was a breast ornament with a pair of phoenixes, a bridle ornament with palmette motif, bridle-bit and gilded ornaments for all places where the leather strips of the harness intersect, and one pair of ring-shaped stirrups.

Illustrations are taken from:

Sekai kōkogaku taikei. **2** (1960): Nihon, Yayoi Period.
3 (1959): Nihon, Burial-mound Period.
Heibonsha, Tōkyō.

5

China 1962-1963

KWANG-CHIH CHANG

Received 15 March 1964

In *Asian Perspectives*, 6(1962), the Editor, Dr Wilhelm G. Solheim II, said that in the near future an extensive reorganization of the China Mainland section will be done, as one person alone cannot cover the archæological work which is being done on the Mainland. For the moment I recapitulate here the important events in prehistoric and early historic archæology on the Mainland for the years 1962–1963.

BIBLIOGRAPHIC NOTE

Most of the archæological work is done by three institutions and is published in three or four periodicals. We shall give the page references to these journals without listing the titles of the articles. The following abbreviations will be used henceforth and in this section:

IA	Institute of Archæology, Academia Sinica, Pg. (This Institute has established, in various parts of the country, a number of 'branches' and task-force 'teams' and/or 'squads'. These will be referred to by their official titles, followed by the abbreviation *IA*.)
IVPP	Institute of Vertebrate Palæontology and Palæoanthropology, Academia Sinica, Pg.
CPAM	Commission for the Preservation of Ancient Monuments. (With slightly varying names, these are established in most provinces, cities, and counties, and will be referred to by the abbreviation followed by the name of the place.)
KK	*K'ao-ku* (Archæology), edited by *IA* and published monthly by the Science Press, Pg. There is no volume designation for this journal, and the numeral order, 1 to 12, is renewed at the beginning of each year.
KKHP	*K'ao-ku Hsüeh-pao* (Archæological Journal), edited by *IA* and published by the Science Press at irregular intervals. The volume and number designations are the same as *KK*.
WW	*Wên-wu* (Cultural Objects), published by the Wên-wu Press, Pg. The volume and number designations are the same as *KK*.
VP	*Vertebrata Palasiatica*, edited by *IVPP* and published by the Science Press. Each (yearly) volume of *VP* consists of four (quarterly) numbers.

The archæological information which appears in the above four periodicals is supplemented by monographs (issued by both *IA* and *IVPP*), books, and other minor periodicals. The Academia Sinica at Taipei, Taiwan, also publishes important material in Chinese archæology. For more comprehensive bibliographic coverage than is practical here, please consult the *COWA Survey and Bibliography, Area 17 (Far East)*, published by the Council for Old World Archæology, Cambridge, Massachusetts.

NEW SITES REPORTED IN 1962–63

New palæolithic sites continued to be reported from the Fenho and Huangho valleys of southern Shansi. The most significant sites reported during the two-year period under survey are Hsihoutu (*WW* 1962, **4/5**: 23–27) and Hoho (Keho) (in Chia Lan-p'o, Wang Tse-yi, and Wang Chien, *Ho-ho: an early palæolithic site in southwestern Shansi*, 1962, Pg.), both in Juich'eng county, southwestern Shansi. From the former site, Hsihoutu, alleged artifacts were reported from demonstrably early Pleistocene deposits, the first find of this early date from North China. (The discovery of an 'Australopithecus-like' mandible from Lant'ien in central-eastern Shensi might be mentioned in this connection, but it is reported to have come from a 'Middle Pleistocene' geological stratum; see *Illustrated London News*, 2 November 1963.) A large number of stone implements, brought to light at the site of Hoho, are of special significance because: *a*. It is possibly within the same time range as, if not earlier than, the Locality 1 of Choukoutien, the site of Peking Man; and *b*. It establishes the early beginning of a 'Fenhoian' palæolithic tradition distinctive from but possibly contemporaneous with the Choukoutienian.

A new palæolithic station, Locality 22, was discovered at Choukoutien in 1953, but the artifacts found at the site were not described until recently (*VP*, 1963, **7** [1]: 84–86).

Other palæolithic sites were reported from the Ordos region (*KK* 1962, **11**: 588–589, 601–606; *VP*, 1963, **7**[2]: 190–191) and from the limestone caves of the southwest (*VP*, 1962, **6**[2]: 193–199; *ibid.* **6**[4]: 408–413).

New excavations of neolithic sites, of varying importance, were undertaken all over the country, and reports are available from the following regions or provinces on the mainland:

Honan: Yangshao, Proto-Lungshan, and Lungshan sites (*KK* 1962, **1**: 23–27; **11**: 557–565. *KK* 1963, **12**: 641–645).

Shensi: Yangshao and Shensi-Lungshan sites (*KK* 1962, **6**: 290–311).

Southwestern Shansi: Yangshao and Shansi-Lungshan sites (*KK* 1962, **9**: 459–464).

Central Shansi: Shansi-Lungshan sites (*WW* 1962, **4/5**: 28–32).

Hopei: Both nuclear and marginal neolithic sites (*KK* 1962, **12**: 635–643. *KK* 1963, **3**: 115–121).

Shantung: Lungshan sites (*KK* 1962, **1**: 28–30; **10**: 509–518. *KK* 1963, **7**: 347–376; **10**: 529–535).

Kansu: Ch'ichia and Hsintien sites (*KK* 1962, **2**: 69–71).

Kiangsu: Ch'inglienkang and Lungshan sites (*KK* 1962, **3**: 111–116, 129–131; **9**: 465–469. *KK* 1963, **1**: 1–8; **6**: 308–318. *KKHP* 1962, **1**: 81–106, **2**: 1–30).

Kiangsu: Hushu Culture sites (*KK* 1962, **3**: 117–128).

Kiangsi: Lungshanoid and Geometric sites (*KK* 1962, **4**: 167–180; **7**: 353–367. *KK* 1963, **1**: 12–14; **12**: 637–640).
Hupei: Lungshanoid sites (*KK* 1962, **7**: 339–344).
Szechwan: (*KK* 1962, **8**: 416–417).
Yünnan: (*KK* 1962, **10**: 529–530).
Sinkiang: (*WW* 1962, **7/8**: 11–15).
Inner Mongolia: (*KK* 1962, **2**: 72–74. *KK* 1963, **1**: 9–11; **10**: 523–528).
Manchuria: The Sungari Neolithic (*KK* 1962, **2**: 82–85; **3**: 139–143).
Manchuria: Islands off Liaotung Peninsula (*KK* 1962, **2**: 76–81; **7**: 345–352).

Most of these new sites reported are in the North China provinces. Important data reported during 1962 and 1963 confirm and add to what we already knew about the neolithic development in North China, for instance: the stratigraphical evidence for the relative dating of the Panp'o and the Miaotikou phases of the Yangshao Neolithic (from the site of Hsiamengts'un, in Pinhsien, Shensi), and the new material from the neolithic sites in Shantung, some of which show considerable deviation from the standard Lungshan neolithic patterns.

The new neolithic sites uncovered in the southwest (Szechwan and Yünnan), Sinkiang (Chinese Turkestan), Inner Mongolia, and Manchuria (both the Sungari valley and the offshore islands near Liaotung Peninsula) have yielded new information on the neolithic development in these respective regions, but the most significant were reported in the southeast, particularly in the province of Kiangsu. The stratigraphy of newly reported sites has established the following cultural historic sequence: Ch'inglienkang Culture (a local phase of the Lungshanoid horizon), followed by Lungshan Culture, which in turn was followed by the Hushu Culture, a local phase of the Geometric. The historic connections of the Ch'inglienkang phase of Kiangsu with the proto-Lungshan sites of Shantung, on the one hand, and with the Ch'üchialing Culture in Hupei, on the other, are also amply implied by the new material reported during the period under survey.

The most important event in the archæology of the Shang civilization was probably the publication of *HPKM1001* (by Liang Ssu-yung and Kao Ch'ü-hsün) by the Academia Sinica in Taipei in 1962. This monograph of 356 pages with 270 plates is on the pre-war excavations at the Royal Tomb No. 1001 at Hsipeikang, near Anyang, in north Honan. New excavations at Anyang by the *IA* in recent years were also reported (*KK* 1963, **4**: 213–216), and another important site of the Shang dynasty was reported in Yenshihhsien, also in Honan (*KK* 1963, **12**: 649–653).

Besides Honan, the heartland of the Shang civilization, new Shang sites or assemblages of Shang style bronzes were reported in Shantung (*KK* 1962, **1**: 30), Kiangsu (*KK* 1962, **3**: 132–133), Shansi (*KK* 1962, **9**: 459–464; *WW* 1962, **4/5**: 33–34), and Hunan (*KK* 1962, **3**: 144–146. *KK* 1963, **12**: 646–648).

The 1962–63 period witnessed very significant advances in the archæology of the Western Chou civilization. New sites and new data from old sites were reported extensively from the Weishui valley of Shensi, known to be the heartland of the Western Chou both before and after the conquest of Shang (*Feng-hsi fa-chüeh* *pao-kao*, edited by *IA* and published by Science Press, Pg, in 1962; *KK* 1962, **1**: 20–22; **6**: 305–311. *KK* 1963, **8**: 403–415; **12**: 654–658). Large quantities of bronze vessels were brought to light, and a developmental sequence of Western Chou ceramics was established near the city of Sian, in central-eastern Shensi. Outside Shensi, Western Chou sites were reported from southern Shansi (*KK* 1963, **4**: 225) and Honan (*KK* 1963, **12**: 649–653), but much more significant are the alleged Western Chou sites and artifacts reported from several places in Hupei (*KK* 1962, **1**: 1–9; **7**: 339–344. *KK* 1963, **4**: 224–225), an area in which Western Chou sites were unheard of hitherto. Our new knowledge of this phase of the ancient Chinese civilization in the middle Yangtze valley bears on the problems of the Western Chou advances into South China and the origins of the Eastern Chou civilizations in the middle Yangtze and regions to the south.

A remarkable achievement in the archæology of the Eastern Chou civilization was the discovery, survey, or excavation of a number of city sites dating from this epoch. These included many ruins of city walls and urban structures in the provinces of Shansi (*KK* 1962, **2**: 55–62; *KK* 1963, **4**: 225–226; **5**: 229–249; **9**: 474–479; **10**: 544–549. *WW* 1962, **4/5**: 55–64), Shensi (*KK* 1962, **6**: 281–289. *KK* 1963, **8**: 419–422), Honan (*KK* 1963, **4**: 225–226), and Hopei (*KK* 1962, **1**: 10–19). Most of them can be identified with cities of that period recorded in historic texts. Probably the most important are the capital cities of the state of Ch'in in Shensi, during the Eastern Chou, now reported for the first time.

Many living sites and burials of the Eastern Chou period were reported in both North and South China, including the provinces of Hopei (*KK* 1962, **5**: 219–239, 254–255; **12**: 509–518, 613–634. *KK* 1963, **3**: 136–139), Shantung (*KK* 1962, **10**: 509–518), Kiangsi (*KK* 1962, **7**: 384. *KK* 1963, **8**: 417–418), Shensi (*KK* 1963, **10**: 536–543), Anhwei (*KK* 1963, **4**: 204–212), Kiangsu (*KK* 1962, **3**: 132–133), Hupei (*KK* 1963, **12**: 659–661), and Hunan (*KK* 1963, **9**: 461–473). In Hopei, new Ordos Bronzes of this period were reported (*KK* 1962, **12**: 644–645), and in such a southern area as Kwangtung, whose Eastern Chou period cultures are known to be the Geometric Neolithic, isolated islands of whole Eastern Chou bronze-iron assemblages were located (*KK* 1963, **2**: 57–61. *KK* 1963, **4**: 217–220). A fourth session of excavations at the now famous site at Shihchaishan, in Chinning, Yünnan, was also reported (*KK* 1963, **9**: 480–485). [See *AP*, **4**: 41–49, 4 pls]

NEW ARCHÆOLOGICAL STUDIES: 1962–63

1. *General*

Prior to 1962–63, works of synthesis on China's prehistoric and early historic archæology made use to varying extents of the new materials excavated since the Communist takeover. Such publications as Cheng Te-k'un's *Prehistoric China* (1959) and *Shang China* (1960), and William Watson's *China before the Han Dynasty* (1961), were, for the most part, library studies written by scholars who were not the direct participants of field archæology during the past decade.

The publication of *Hsin Chung-kuo ti k'ao-ku shou-hu* (Archæology in New China), edited by *IA*, published by Wên-wu Press, Pg, in August 1962, marks the first effort by the field archæologists themselves to synthesize the archæological materials brought to light from all parts of China and from all periods in her prehistory and history. The theoretical framework on the basis of which the interpretation was made and the data was presented is, of course, Marxist, at least in appearance. It is organized under three major headings: *Primitive Society*, *Slave-holding Society*, and *Feudal Society*, documented in detail in no fewer than 445 footnotes, which constitute an extensive and highly useful bibliography in the field of Chinese archæology.

Similar in scope but restricted to the pre-Ch'in period in time is *The Archæology of Ancient China* (New Haven and London, Yale University Press, May 1963) by your regional editor. It is an interpretative summary of the cultural development in the entire area of China from the earliest prehistoric beginnings down to the unification of the Ch'in Empire in 221 B.C., drawing on archæological material available to the middle of 1962. In contrast to the previous Chinese language monograph, its theoretical framework is anthropological and stresses a developmental classification similar to the approach used by Robert J. Braidwood and Gordon Childe for the Old World, and that used by Gordon Willey and Philip Phillips for the New. Two general articles published by your regional editor during this period may be of interest: 'China' in 'Courses toward Urban Life', (R. J. Braidwood and G. R. Willey, eds.), *Viking Fund Publications in Anthropology*, 1962, **32**: 177–192; and 'Prehistoric Archæology in China: 1920–60', in *Arctic Anthropology*, 1963 **1**(2): 29–61.

Several articles, similarly organized, on Chinese archæology in general were written by Hsia Nai during the period under survey: *Hsin Chung-kuo ti k'ao-ku hsüeh* (Archæology in the New China), *KK* 1962, **9**: 453–458; 'Archæology in New China', *Antiquity*, 1963, **37**(147): 176–184; 'Recent archæological work in China', *Archæology*, 1963, **16**(3): 176–182; 'Archæology in China since 1949', *Arts and Sciences in China* (London), 1963, **1**(4): 2–16. A French version of a similar article appeared in *T'oung Pao*, 1962.

2. *Palæolithic Period*

On fossil man in China and Pleistocene stratigraphy, see your regional editor's article on 'New Evidence on Fossil Man in China', *Science*, 1962, **136**(3518): 749–760.

During the period under review the problem of early Pleistocene primates in the area of China received the close attention of palæontologists. Woo Ju-k'ang in his monograph, *Chü-yüan hsia-ho-ku ho ya-ch'ih hua-shih* ('The Mandibles and Dentition of *Gigantopithecus*') (*Palæontologia Sinica*, n.s. D, **11**, Science Press, Pg), in 1962, provides new data on this significant group of fossil remains. A recent taxonomic assessment of *Gigantopithecus* places this creature under Pongidae (*VP*, 1962, **6**[4]: 375–383). But the recent discoveries of early Pleistocene cultural remains in North China will compel us to reexamine the early Pleistocene primates of South China in a somewhat different light.

New studies of the Choukoutienian assemblage appeared under review (*VP*, 1962, **6**[3]: 270–279), but greater attention was given to the new sites in the Fênho valley of southwestern Shansi that are dated to the middle Pleistocene. The date of the site at Hoho, in Juich'enghsien, southwestern Shansi, is in dispute (*VP*, 6[3]: 291–298). The palæolithic artifacts found at this site exhibit close similarities with the later Tingts'un assemblage in the same region but considerable deviation from the Choukoutienian pattern. The relative chronology of Hoho and Choukoutien (Locality 1), is, therefore, of importance in evaluating the lower palæolithic development in North China.

3. *Neolithic Cultures of North China*

Studies of the neolithic cultures of North China, treating the problem in depth, both in theory (e.g. *KK* 1963, **11**: 577–589) and in practice have appeared. They present new data and pay attention to the finer aspects of the neolithic culture and society. The developmental view of the Yangshao and Lungshan *stages* (as against the Yangshao and Lungshan *cultures* as having different origins but existing contemporaneously) has been generally accepted, and deeper and more critical insight into each of these two stages of culture was shown during the period under survey than previously (on Yangshao: *KK* 1962, **5**: 262–265; **6**: 318–329; on Lungshan: *KK* 1963, **7**: 377–380). Intensive investigations were undertaken in particular in connection with the Yangshao stage for its subdivisions (*KK* 1963, **3**: 149–152; *KKHP* 1962, **1**: 49–80), its social organization (*KK* 1962, **5**: 256–261; **7**: 377–384; **11**: 592–600), its burial customs (*KK* 1962, **3**: 158–160), and even its wine-making industry (*KK* 1962, **1**: 41–45).

Other significant studies include one of human skeletal materials from a Yangshao site (*KKHP* 1962, **2**: 85–104), an analysis of pollen and spore remains at the Yangshao site at Panp'o, the first such analysis in Chinese neolithic archæology (*KK* 1963, **9**: 520–521); and an assessment of the neolithic cultures in northern Hopei, an area where the nuclear neolithic cultures of North China and the peripheral cultures centring in Inner Mongolia were in frequent contact, giving rise to a complex situation in cultural exchange (*KK* 1962, **12**: 658–671).

4. *Neolithic Cultures in Kiangsu*

A most intensive and sophisticated investigation of neolithic cultures has been undertaken in the province of Kiangsu, the best known region of the southeastern neolithic tradition. New sites brought to light during the 1962–63 period, reported above, help us to understand better the prehistoric stratigraphy of the area and the cultural contents of each of the major strata (*KK* 1962, **3**: 147–157. *KK* 1962, **1**: 32–40). Very significant are the many food remains (cereal, fruits, and vegetables), uncovered from southeastern sites (in Kiangsu and Kiangsi particularly).

5. *Bronze-Iron Age*

Works of a general nature to appear in 1962–63 were William Watson's *Ancient Chinese Bronzes* (Rutland, Vermont, Charles E. Tuttle Co., 1962), a handy introduction to the study of Shang and Chou bronze vessels for Western students; Bernhard Karlgren's 'Some characteristics of the Yin Art', *Bulletin of the Museum of Far Eastern Antiquities*, Stockholm, 1962, **34**: 1–28); Cheng Te-k'un's *Chou China* (Cambridge, W. Heffer & Sons, 1963—this is the third volume of the author's *Archæology in China* series and is a comprehensive summary of the archæological materials of the Chou civilization brought to light in China down to our last decade: see also his 'Animal Styles in Prehistoric and Shang China', *Bulletin of the Museum of Far Eastern Antiquities*, Stockholm, 1963, **35**: 129–140; and Takayasu Higuchi's 'Newly discovered Western Chou Bronzes', *Acta Asiatica*, or *Bulletin of the Institute of Eastern Culture*, Tōkyō, The Tōhō Gakkai, 1962, **3**: 30–43.

Several significant articles on the chronology of the Chou artifacts have also appeared in 1962–1963. Formerly, the chronological studies of Chou artifacts were based on either historic texts or the stylistic changes of Chou bronze weapons and vessels. Recent excavations of Western Chou sites from all over North China, but especially from the lower Weishui valley of Shensi, the heartland of the Western Chou civilization, have begun to establish stratigraphical sequences of Western Chou artifacts, pottery in particular, that may be used as the standard against which other chronological schemes must be measured (see the *Feng-hsi Excavations* monograph reported above for detailed information). Ceramic seriation studies undertaken at the Eastern Chou sites near Houma (*WW* 1962, **4-5**: 43–54) began to shape up an Eastern Chou chronological yardstick of the same nature, although its spatial applicability must be restricted.

A highly interesting and provocative article, on the meaning of the word 'K'ang Kung' in Western Chou bronzes, was written by T'ang Lan and published in *KKHP* 1962, **1**: 15–48. If T'ang's interpretation is valid, the established Western Chou chronology of bronze vessels is due for overhaul.

For the first time archæological assemblages of the Bronze and early Iron Ages in North China were correlated with coastal line changes of the Pohai gulf and dated accordingly (*KK* 1962, **12**: 652–657).

Other topical studies in the technology and typology of the Shang and the Chou include descriptions of possibly early Shang bronzes in museum collections (Barbara Stephen, 'Early Chinese Bronzes in the Royal Ontario Museum', *Oriental Art*, London, 1962, **8**[2]: 63–67); a hypothesis on the correlation of metallurgical techniques and decorative designs on Shang bronzes (Wilma Fairbank, 'Piece-mold craftsmanship and Shang bronze design', *Archives of the Chinese Art Society of America*, 1962, **16**: 9–15); treatises on mirrors (*KK* 1963, **9**: 516) and bronze swords (*KKHP* 1962, **2**: 75–84; *WW* 1963, **11**); an intensive examination of ceramic moulds for bronze casting discovered at the Eastern Chou site at Houma (*WW* 1962, **4/5**: 37–42); an original essay on 'The first floral patterns on Chinese bronzes' by Bo Gyllensvärd, in *Bulletin of the Museum of Far Eastern Antiquities*, Stockholm, 1962, **34**: 29–47; John F. Haskin's comparative study of Chou and Altai archæological materials: 'The Pazyryk chanfrons, the t'ao-t'ieh, and Late Chou China', *Archives of the Chinese Art Society of America* (1962) **16**: 92–96; and 'Changing relationships of man and animals in Shang and Chou myths and art' by your regional editor in *Bulletin of the Institute of Ethnology*, Academia Sinica (1963) **16**: 115–145.

Excavations on the now-famous site at Shihchaishan, near Chinning, in Yünnan, were done for the fourth time, as reported on p. 72, and Feng Han-chi's penetrating study of the artifacts brought to light from this cemetery (*KK* 1963, **6**: 319) should be of interest to ethno-historians and archæologists alike.

6

India

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INTRODUCTION

This summary of the results of explorations and excavations carried out in the country during 1962–63, i.e. between April 1962 and March 1963, is followed by a bibliography comprising the more important publications on the subject which appeared during the period under review.

As in earlier years, the Archæological Survey of India, Departments of Archæology of the various State Governments, universities and research institutes all played their parts, one vying with the other, in unravelling the past. In this process, several river valleys were surveyed and about thirty sites of varying chronological horizons were excavated. The results are grouped under the three customary headings, viz. 'The Stone Ages', 'The Protohistoric Period' and 'Historical Archæology'. In the part dealing with protohistoric cultures, references have also been made to the recently-obtained C-14 dates.*

THE STONE AGES

Because of the large number of tools and fossil fauna it yields, and the stratigraphic data it possesses, the Narmada Valley has been, and is likely to be for some time, one of the chief attractions of the prehistorian. Thus, continuing their work in the valley, Dr G. J. Wainwright and Shri S. C. Malik, both of the M. S. University of Baroda, confirmed the three cycles of sedimentation and denudation noted earlier by De Terra and Patterson. Pointing in the same direction was the evidence of three terraces obtained by Professor H. D. Sankalia and Shri S. G. Supekar, (both of the Deccan College and Post-graduate and Research Institute, Poona) in the valleys of the Narmada and of its tributaries in Hoshangabad and Narsingphur Districts. The earlier two terraces yielded tools of the early and middle Stone Ages.

In southern Bihar, the valley of the Suvarnarekha was explored by Shri D. Sen and Shri A. K. Ghosh of the University of Calcutta. Several Stone Age sites were discovered, the overall stratigraphic position being as follows. Occurring in a thick gravel deposit, which itself lay in a lateritic matrix, were tools of the early Stone Age. A preliminary study of the tools, from bottom upwards, showed a typological evolution. Overlying the gravel was a layer of clay, the lower and upper parts of which contained respectively a flake-blade industry of the middle Stone Age, and microliths assignable to the late Stone Age. It is likely that the latter tools had evolved from the former, although much more evidence would be necessary to establish this fully.

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* Although it had been stated in last year's review that the reader may expect this year a separate summary of the C-14 determinations, it is thought better now to refer to the dates, as and when necessary, in the course of the narrative of the cultures themselves.

In Kathiawar, Gujarat State, there was a significant discovery of tools of the early Stone Age. This was the first time they had been reported from the peninsula. The initial discovery was made jointly by Professor H. D. Sankalia and Shri J. M. Nanavati of the Department of Archæology, Government of Gujarat. Further exploration was continued by the latter in collaboration with Dr Z. D. Ansari of the Deccan College. The tools were found in the gravels of the Bhadar River in the neighbourhood of the Harappan site of Rojdi.

The most noteworthy excavation in South India was carried out by Dr. K. D. Banerjee of the Prehistory Branch of the Archæological Survey of India. Working from the top downwards, he found microliths and a middle Stone Age industry (Burkitt Series II). The cave floor has not yet been reached. As in the case of the Suvarnarekha evidence above, here also the indication was that the microlithic industry had developed from the preceding flake-and-blade industry.

Dr K. D. Banerjee also found microliths at the *teris* (reddened sand-dunes) near Pondicherry.

Many other Stone Age sites were discovered, falling in: Chittoor District, Andhra Pradesh; Monghyr District, Bihar; Jabalpur, Sahol and Sidhi Districts, Madhya Pradesh; Ahmadnagar, Amraoti, Dhulia, Poona, Sangli, Satara and Wardha Districts, Maharashtra; Dharwar District, Mysore State; Chitorgarh and Udaipur Districts, Rajasthan; Mirzapur District, Uttar Pradesh; and Midnapur District, West Bengal.

THE PROTOHISTORIC PERIOD

The term 'Protohistoric Period', as might be expected, has varying connotations in different countries. In India, it is vaguely but usually applied to the period falling between the end of the late Stone Age (which itself is not well defined but may be around 4000 B.C.) and the beginning of regular history with the Mauryas in the 4th century B.C. Thus, in it are included not only the Indus Civilization, in which the art of writing (leading to documentation) was known, but also other cultures, materially less advanced, which preceded the historical period. Also included in it are the 'neolithic' cultures (it is still not clear as to which of them were truly 'lithic', i.e. without metals, and should thus be termed the Stone Ages), and the megalithic cultures. Though megaliths might have continued up to and even on our side of the Christian era, they seem to go back rather early, and little is known about their historical association.

We shall begin with the earlier end of the chronological scale.

Very little is known of nomadic, food-gathering late Stone Age man in India and how he began to produce food and live a settled village life. This striking lacuna in our knowledge shows that little has so far been done in this direction.

During the year under review, the earliest protohistoric culture dealt with was that at Kalibangan, Ganganagar District, Rajasthan. Shri B. K. Thapar and I, continuing the work for the third season, brought to light many new aspects of the pre-Harappan culture identified in the lower levels of the smaller of the two mounds.

Within an average thickness of 1·5 metres, the pre-Harappan deposits showed at least three structural phases, there also being three rebuildings on the same plan in the third phase. The houses were made of mud bricks measuring 10×20×30 centimetres. The proportions of the three dimensions of bricks, viz. 1 : 2 : 3, are quite different from those of the succeeding Harappan bricks, viz. 1 : 2 : 4 (size 7·5×15×30 centimetres).

This pre-Harappan culture has about half a dozen varieties of earthenware, of which the characteristic ones are: an unslipped red ware with designs painted in black, often augmented by white (Pl. I); a red ware showing a roughened surface; and another red ware, this time sturdy and bearing deeply-incised designs on the interior.

Referring to small finds, the absence of long ribbon-blades of chert, chert weights, terracotta 'cakes'—all so typical of the Harappa Culture—is very noticeable. Instead of the ribbon blades, there occurred microlithic blades, often retouched, of semi-precious stones like chalcedony, agate, etc. The presence of an axe and a few other objects of copper duly attested to the use of that metal. The culture thus was a chalcolithic one, with well built houses, but it has yet to be ascertained if and in what way it contributed to the make-up of the Harappa Culture.

As said last year, the character of the settlement had changed during Harappan times. There were now two distinct parts, a smaller one on the west and a bigger one on the east. Along the southern periphery of the smaller part a massive mud-brick wall, possibly with a bastion, was observed. This lent support to the hypothesis that this part of the settlement might have been a citadel.

In the eastern part, a few more houses, streets and cross-lanes were brought to light (Pl. II*a*). The pottery showed, in the lower levels, a mixture of true Harappan and pre-Harappan elements, but the latter gradually began to diminish until it completely disappeared from the upper levels. No exclusively pre-Harappan settlement was found.

At Lothal, the now well-known Harappan site in Gujarat, Shri S. R. Rao of the Survey put the finishing touches to several seasons' work. On the northern fringe of the mound he exposed a long brick wall, presumably a protection against floods. Noteworthy finds included five seals and a terracotta bull.

In Gujarat again, work was resumed at the Harappa site of Rojdi, by Shri J. M. Nanavati and Shri M. A. Dhaky of the State Archæological Department. Two broad cultural sub-periods, A and B, were confirmed. While A was purely Harappan, B showed links with Prabhas, another noteworthy protohistoric site of the region.

C-14 determinations for Kalibangan, Lothal and Mohenjo-daro show that the Harappa culture may not have had so long a duration as the thousand years between *c.* 2500 and 1500 B.C. It may have had a much shorter one between *c.* 2400 and 1700 B.C.

Of the Central Indian Chalcolithic Culture, the only site excavated during the year was Eran, Sagar District, Madhya Pradesh. Continuing his work over here, Shri K. D. Bajpai of the Saugar University brought to light more details of the mud fortification-wall. Surviving to a maximum height of 6·5 metres, it had a basal width of 47 metres. From the wall were obtained typical black-on-red pottery, microliths, a fragmentary copper celt and beads of semi-precious stones. The fact that channel-spouted bowls, typical of the upper levels of the chalcolithic settlement, were absent indicated that the fortification had been built at an early stage of the occupation of the site. The settlement is girdled on three sides by the River Bina; on the fourth, south side, a moat 37 metres wide and 5·5 metres deep has been discovered.

The habitational deposits yielded evidence of six structural phases within the chalcolithic period (for later periods see p. 83). Taking the extremes, the C-14 determinations for the chalcolithic occupation are 2035 ± 75 B.C. and 640 ± 60 B.C. But judging from the general range of the determinations for this site, as also from those obtained for another site of this culture, Navdatoli, it would appear that the Central Indian Chalcolithic Culture flourished between *c.* 1700 and 1200 B.C. At best, it could have been only a late contemporary of the Harappa Culture.

In fact, amongst the known protohistoric cultures of India, only the Southern Neolithic can claim a real contemporaneity with the Harappa Culture, as proved by the C-14 determinations for Utnur. Of the other neolithic cultures, the one identified at Burzahom does not seem to have antedated 2000 B.C. (The earliest C-14 date available for it is 1850 ± 130 B.C.) And although it would be risky to hazard a guess, the Eastern Neolithic Culture is also unlikely to have crossed the 2000 B.C. mark. (No C-14 date is yet available for this culture.)

To continue with these neolithic cultures: Shri T. N. Khazanchi, resuming his excavation at Burzahom near Srinagar, Kashmir, brought to light very interesting evidence relating to Phases II and III, about which see *AP*, 7: 31. Within the habitation-area itself, human and animal burials were encountered. In both categories, there were examples of complete (articulated) as well as fractional inhumations. In the human burials, three features were specially noteworthy: the reclining posture of the body (Pl. III), the use of red ochre on the bones, and the trepanning of the skull. The animals buried included the dog, wolf and ibex. Of unusual interest was a burial containing the remains of five wild dogs, and some antlers.

Many new sites of the Eastern Neolithic Culture have been brought to light in the Sanjay Valley, Bihar, in the course of an exploration carried out by Shri D. Sen and Shri A. K. Ghosh, both of the University of Calcutta. The material collected includes, besides polished stone axes and chisels of the Eastern variety, hand-made as well as wheel-made pottery ranging from greyish to brownish-red.

Throwing much welcome light on this culture was the excavation at Deojali Bading, Mikir and North Cachar Hills District, Assam, carried out by Professor M. C. Goswami and Shri T. C. Sharma of the University of Gauhati. The half-metre deep, single-culture deposit yielded polished stone axes of the Eastern variety, (including a shouldered specimen), mullers, pestles, querns, and poorly-fired greyish pottery bearing basket and cord-impressions on the exterior.

While dealing with eastern India, reference may also be made to the excavation at Pandu-rajar-dhibi, Burdwan District, West Bengal, continued by Shri P.C. Dasgupta, Director of the State Archæological Department. As stated last year (*AP*, 7: 31), the lower levels of the site yielded a culture characterized by white-painted black-and-red and black-on-red wares; these might be linked up with generally similar wares of the Ahar (Banas Valley) and Central Indian Chalcolithic

Cultures respectively. This year's work has added new dimensions to our knowledge of the Pandu-rajar-dhibi culture. Three kinds of burial were identified within the habitation area itself; complete (extended) burials in grave-pits, fractional burials in grave-pits, and fractional burials in urns. The only C-14 determination available for this culture (early level) is 1012 ± 120 B.C.

Indeed, the white-painted black-and-red ware as a whole requires a detailed study. For, whatever their ultimate relationship with the other wares of the class, sherds in this technique (including painting) have been found in the lower levels of the following sites: Chirand in Saran District, Bihar, excavated by Dr B. S. Varma and Shri Lala Aditya Narain of the Department of Archæology and Museums, Government of Bihar; Rajghat, near Varanasi in Uttar Pradesh, excavated under the guidance of Professor A. K. Narain of the Banaras Hindu University; and Sohagaura, Gorakhpur District, Uttar Pradesh, excavated by Shri G. C. Chaturvedi of the University of Gorakhpur.

Referring to the protohistory of the Ganga Valley, I may add that while in the middle regions (i.e. in eastern Uttar Pradesh and western Bihar) the white-painted black-and-red ware poses new problems, in the upper regions (i.e. in northwestern Uttar Pradesh) a few newly discovered sites reveal a pottery that might turn out to be an off-shoot of the Harappan. They were found during exploration carried out by Shri M. N. Deshpande, of the Survey. The relationship, if any, of this suspected Harappan ware with the 'Ochre Colour Ware', found at Bahadarabad and in the earliest levels at Hastinapura and Atranji-khera (all in western Uttar Pradesh) still remains to be worked out.

Atranji-khera, where trial-trenching had been done last year, was subjected to a more detailed excavation this year by Shri R. C. Gaur, under the general guidance of Professor Nurul Hasan. The site revealed six cultural periods, of which the first two, from bottom upwards, are protohistoric; Periods III and IV are early historical, and V and VI respectively belong to early and late medieval times. Period I, with an average thickness of one metre, yielded the ochre-colour ware, some of the specimens bearing incised notches and wavy lines. Period II showed a clear-cut break and was characterized by the painted grey ware, with which also occurred black slipped, black-and-red and red wares. A noteworthy feature was the occurrence of iron arrow-heads and spearheads right from the beginning of the Period. A C-14 determination places an early level of the Period at 1025 ± 110 B.C., which clearly shows that the Painted Grey Ware Culture (associated with the Indo-Aryans on circumstantial evidence) as well as the use of iron in India are both anterior to 1000 B.C.

To come to megaliths, which, for reasons stated earlier (p. 77), are being dealt with under the sub-heading 'Protohistoric Period'. Explorations by persons belonging variously to the Survey, Departments of Archæology, Governments of Madras and Andhra Pradesh, and the University of Madras, have brought to light many new megalithic sites in Chittoor, Guntur and Kurnool Districts, Andhra Pradesh; in Coimbatore and Salem Districts, Madras State; in Chanda District, Maharashtra; and in Dharwar and Mysore Districts, Mysore State. In Andhra Pradesh, Shri Abdul Waheed, Director of the State Archæological Department, continuing his work at Yeleswaram, Nalgonda District, excavated examples of dolmenoid cists, cists with port-holes, cairn circles, and urn burials. They all yielded black-and-red ware and iron. Of singular interest, however, was a cairn circle which contained two human skeletons placed one over the other (Pl. II*b*).

As often happens, fresh discoveries complicate problems at least for a time. Such is the case with the 'megaliths' excavated in southern Uttar Pradesh at Banimilia Bahera, Mirzapur District, and at Hathinia, Varanasi District. These sites are under the guidance respectively of Professor A. K. Narain of the Banaras Hindu University and Professor G. R. Sharma of the Allahabad University. Conforming broadly to the types known as the cairn circle and cist, these Uttar Pradesh megaliths are associated with dull red, black slipped and black-and-red wares. Skeletal remains are very meagre. Iron has so far been absent. On the other hand, a possible association with microliths has been reported. All this naturally raises the question, what genetical relationship, if any, was there between these Uttar Pradesh megaliths and their south Indian counterparts.

HISTORICAL ARCHÆOLOGY

While some of the protohistoric sites have yielded valuable data relating to historical archæology as well, several exclusively historical sites were also excavated during the year under review. Below are the results of the more important sites, beginning from the north.

Besides Atranji-khera (above, p. 80), two other sites in Uttar Pradesh were excavated. They are at Prahladpur and Rajghat, both in Varanasi District, and are under the general guidance of Professor A. K. Narain. Results have been noteworthy. At Prahladpur the occupational strata fall into two phases, A and B. While A yielded, amongst other things, black-and-red ware and microliths (represented by a fluted core and a few waste flakes), B was marked by the appearance of iron, the northern black polished ware and punch-marked coins. Digging was done across the fortifications also, but their relationship with the habitational strata remains to be determined.

At Rajghat, many new structures of early historical times were exposed. The finds included terracotta human and animal figurines, seals and sealings and a large variety of beads of semi-precious stones.

In Bihar, four sites deserve mention: Antichak, Balirajgarh, Chirand and Rajgir, respectively in Bhagalpur, Darbhanga, Saran and Patna Districts.

In continuing their excavation at the Buddhistic site of Antichak (*AP*, 7: 33), Prof. B. P. Sinha and Dr R. C. Prasad Singh of the University of Patna exposed a chamber containing an image of Avalokitesvara on a brick pedestal. On the floor lay a large number of terracotta plaques with Buddhistic scenes.

The Balirajgarh excavation, carried out by Shri Raghbir Singh of the Survey, brought to light a fortification girdling the site. Dating back to *c*. 2nd century B.C., the fortification wall consisted of a mud-brick core with burnt-brick revetments on either side. It showed three phases of rebuilding, and continued in use up to the Pala period. In the habitation area, the earliest deposits yielded the northern black polished ware. (The natural soil, however, was not reached owing to the high water-table.)

At Chirand, three periods were identified. While the earliest Period, I, yielded white-painted black-and-red ware (above, p. 80) and some probable specimens of microliths, Period II was marked by the presence of iron and the northern black polished ware. A few sherds of the black-and-red ware, which (without painting) continued from the preceding Period, bore graffiti. Assignable to the early centuries of the Christian era, Period III had three structural phases. Amongst the finds of this Period, particular mention may be made of terracotta figurines showing Kushan traditions and an inscribed terracotta sealing.

The dig at Rajgir, continued by Shri Raghbir Singh of the Survey, confirmed the three Periods of occupation noted last year (*AP*, 7: 34). It confirmed that the northern black polished ware occurred in the earliest, Period I. More details about the fortifications were obtained, particularly near the southeastern corner. In a pre-defence deposit was found a steatite plaque with interesting sculptured scenes (Pl. IV). The style is reminiscent of that of a ring-stone from Rupar, ascribable to Period III (*c.* 600–200 B.C.)

Further east, in West Bengal, two historical sites were excavated: Rajbadidanga (Jadupur), Murshidabad District, by Shri S. R. Das of the Department of Archæology, Calcutta University; and Chandraketugarh, District 24-Parganas, by Shri K. G. Goswami of the Asutosh Museum of the same university.

At Rajbadidanga, five structural phases, ranging in date from *c.* 3rd to 12th century A.D., were brought to light. The finds included a large number of seals, one of which referred to *Raktamrittikā Mahā-vihāra*, a monastery described by the Chinese pilgrim Hsüan Tsang (A.D. 602–664) who visited India. This monastery, according to his description, was in the suburbs of Karnasuvarna, the capital of King Sasanka. The excavation, therefore, has established beyond doubt the identification of this ancient Gauda capital.

The excavation at Chandraketugarh, in progress for several years, has brought to light a sequence beginning with the assemblage of the northern black polished ware and punch-marked and cast coins of copper (*c.* 5th century B.C.) and ending up with finds ascribable to *c.* 10th century A.D. Several structures were encountered, but one made of massive kiln-burnt bricks and set on wooden piles was most interesting. It belonged to Period III (*c.* 1st–3rd century A.D.), from which were also obtained sherds of the rouletted ware and exquisitely moulded terracotta human figurines.

Before proceeding southwards, mention must be made of the excavations carried out in Rajasthan: at Bairat in Jaipur District, by Shri N. R. Banerji of the Survey; and at Nagari, Chitorgarh District, by Shri K. V. Soundararajan, again of the Survey.

At Bairat four periods were identified. From bottom upwards, Period I yielded a few sherds of the painted grey ware, Period II the northern black polished ware, and III ceramics of the early centuries A.D. After a break in occupation, Period IV yielded Muslim glazed wares.

The occupational strata at Nagari were divisible into three phases, dating from *c.* 4th century B.C. to 5th century A.D. A cyclopean wall also came into being during Phase III. Amongst the ceramics, particularly noteworthy were specimens of the red polished ware and of a kaolin ware.

In Madhya Pradesh, two sites deserving mention are Eran, to which a partial reference has already been made above (pp. 78–79); and Bilawali, Dewas District, excavated by Shri V. K. Misra of the Survey.

At Eran, remains of four periods were encountered. Whereas Period I (earliest) yielded chalcolithic material, Periods II-IV related to historical times. Period II was marked by the advent of iron. As to the ceramics, while the other chalcolithic wares of Period I (p. 78) were no longer to be seen during this period, some of the specimens in plain black-and-red ware did show a relationship in shape with those in the white-painted black-and-red ware of the earlier period. Period III yielded the red polished ware and coins of the Western Kshatrapas. After a break, Period IV was ascribable to late medieval times.

But for the chalcolithic strata, Bilawali too showed a sequence similar to that of Eran. Thus, its Period I yielded iron along with black-and-red ware; Period II punch-marked coins and fragments of stones with 'Mauryan polish'; Period III pottery and other material of the early centuries A.D.; and Period IV an assemblage ascribable to early medieval times.

In Gujarat, Dr R. N. Metha, continuing his excavation at the Buddhistic site of Devnimori, Sabarkantha District, brought to light a relic-casket (Pl. V*a*), from within the *stūpa*, the inscription on which clearly testifies to the construction of the *stūpa* during the reign of Rudrasena III of the Western Kshatrapa dynasty. Several images of Buddha were also recovered and interesting details obtained regarding the adjacent *vīhāra*.

A small-scale excavation of Dwarka, on the western coast of Gujarat State, was undertaken by Professor Sankalia and Shri Nanavati with a view to ascertaining its antiquity. The earliest occupation was found to go back only to 2nd–3rd centuries B.C., whereas literary evidence has it that Dwarka existed during the time of Krishna of *Mahābhārata* fame. (No doubt Krishna's own date is uncertain, but it is unlikely to have been as late as 2nd–3rd century B.C.) Thus, a further investigation is necessary to identify the old Dwarka. In this hunt, the claims of Mul Dwarka, on the southern coast of Kathiawar, should not be overlooked. Indeed, the mound of Prabhas, which is commonly regarded as a part of Mul Dwarka, has already given evidence of its high antiquity, going back at least to the middle of the second millennium B.C.

To come to South India.

In Andhra Pradesh, excavations were carried out at Yeleswaram, already referred to in part above (pp. 80–81), and at Dharanikota, in Guntur District. The work at the latter site was done by Shri M. Venkataramayya of the Survey.

The work at Yeleswaram brought to light, in addition to megalithic remains, a bathing *ghāt*, a *chaitya* and two *stūpas*. Amongst the finds of the early centuries A.D., particular mention may be made of sherds of the red polished ware and of a coin of the Roman Emperor Septimius Severus (A.D. 193–211). There is evidence to show that the site was in continuous occupation up to late Pallava times.

Dharanikota, referred to as Dhanakataka in ancient inscriptions, yielded valuable evidence regarding a navigation channel and a wharf. At first the wharf seems to have been a wooden one which was soon replaced by one of brick. In all, six constructional phases were noticed. Associated with Phases I and II was the megalithic black-and-red ware. Phase III yielded the Arretine and rouletted wares; and from Phase VI came late Satavahana coins. Amongst other small finds, particularly noteworthy were examples of Roman glass bangles and bowls. The excavation also yielded some evidence regarding the defence system of the site, but much more work is necessary to get a detailed picture.

Evidence of another wharf, belonging to the early centuries A.D., was brought to light at Kaveripattinam, Thanjavur District, Madras State, excavated by Shri S. R. Rao of the Survey. In the burnt-brick structure of the wharf a series of post-holes were observed (Pl. V*b*), which indicate how the boats might have been tied. The excavation partially corroborates the data of Tamil literature, according to which Kaveripattinam was the port-capital of the early Cholas.

In Madras State two other excavations may be mentioned: one at Tirukkambuliyar, Tiruchirappalli District, continued by the University of Madras, and another at Kanchipuram, Chingleput District, carried out by Dr R. Subrahmanyam of the Survey. The work at the former site, besides confirming the sequence reported upon last year, brought to light a large brick structure which might have been a granary.

The excavation at Kanchipuram was carried out within the precints of the Kamakoti Math, which showed that the site might be earlier than the Christian era. From bottom upwards, the deposits yielded the megalithic black-and-red ware, rouletted ware and amphorae, Satavahana coins, Pallava coins and a coin of Rajaraja Chola I (A.D. 980–1014). Further work is expected to ascertain the antiquity of the Math itself.

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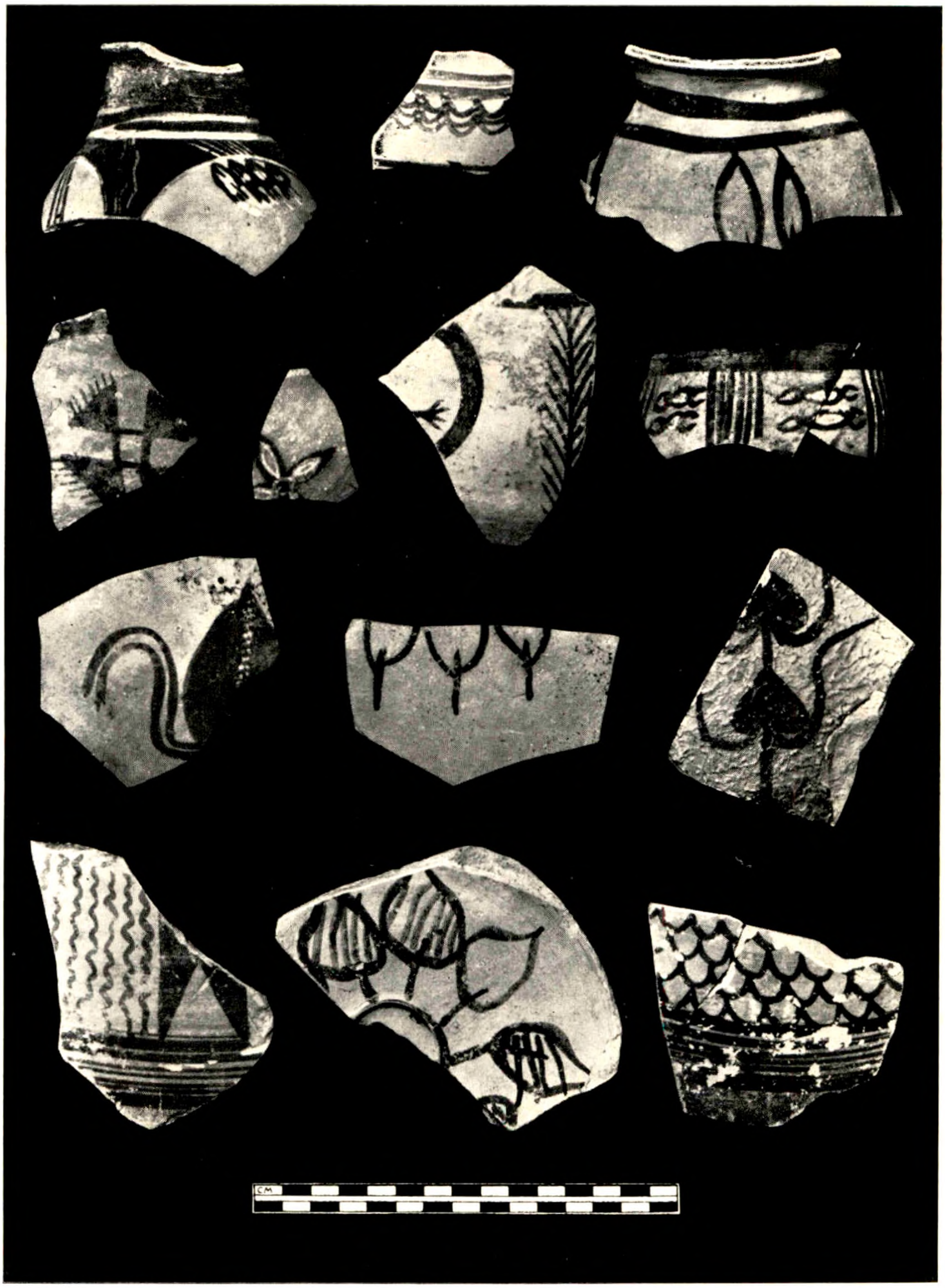
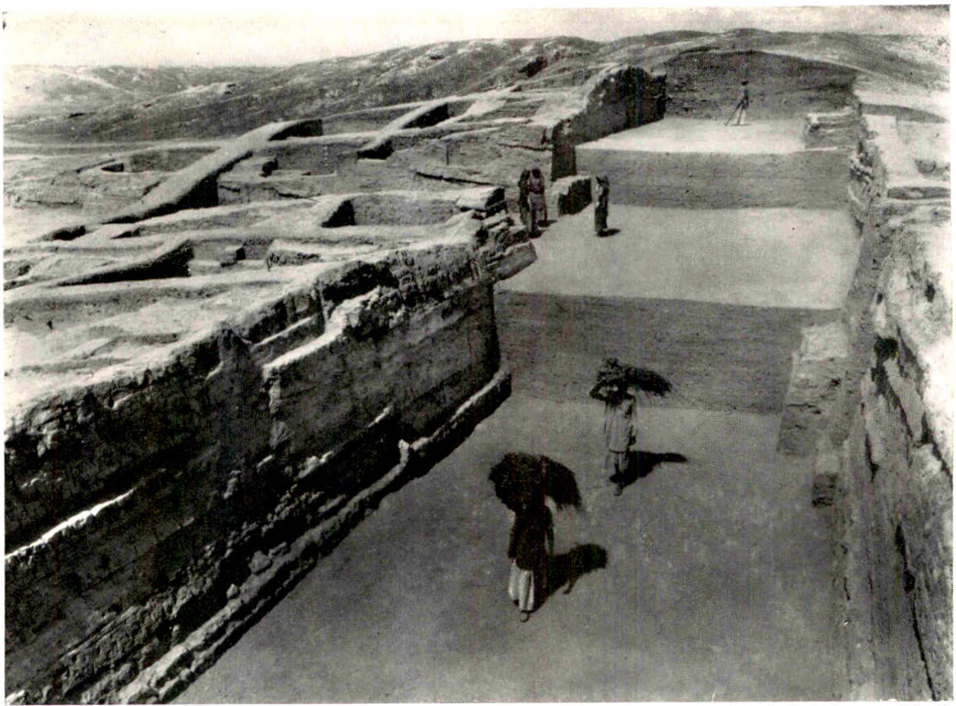


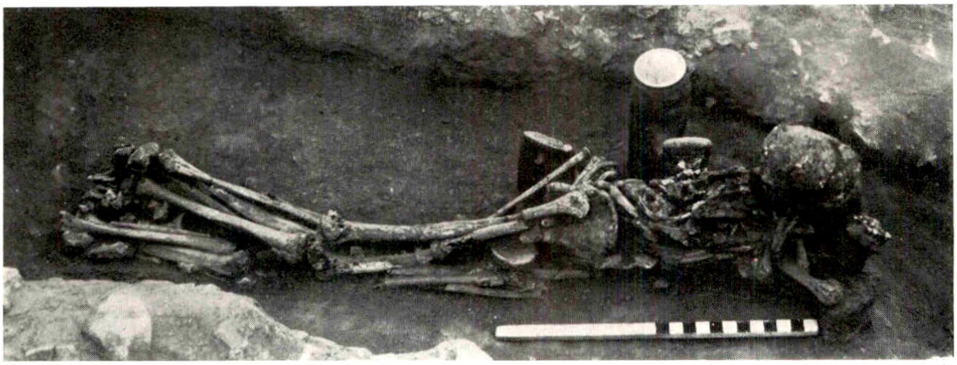
Courtesy, Archæological Survey of India

Kalibangan. Characteristic red ware with designs painted in black pigment, occasionally augmented by white, from pre-Harappan levels. See p. 78



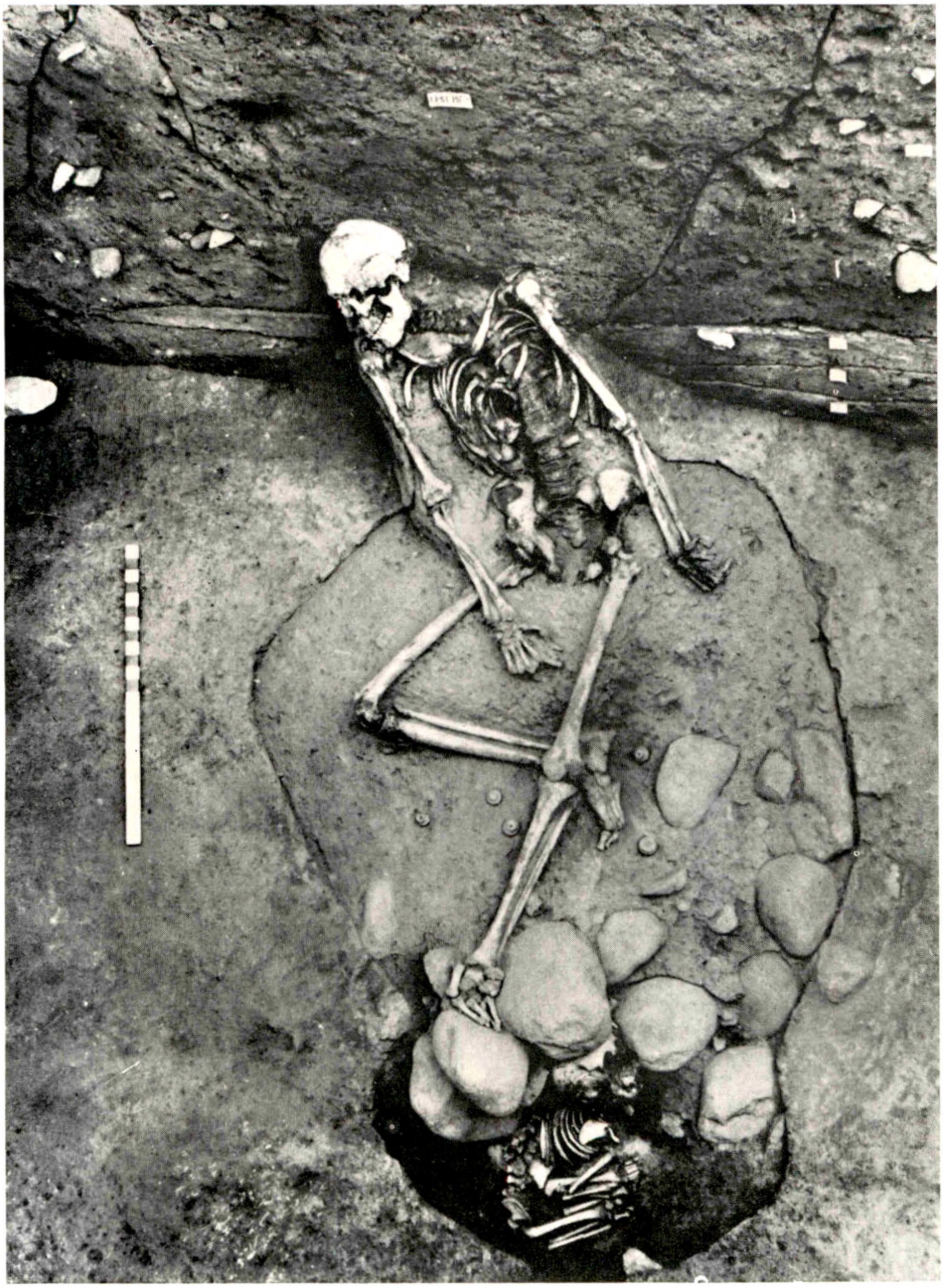
Courtesy, Archæological Survey of India

a. Kalibangan. View of a Harappan street, with mud-brick houses on either side. See p. 78



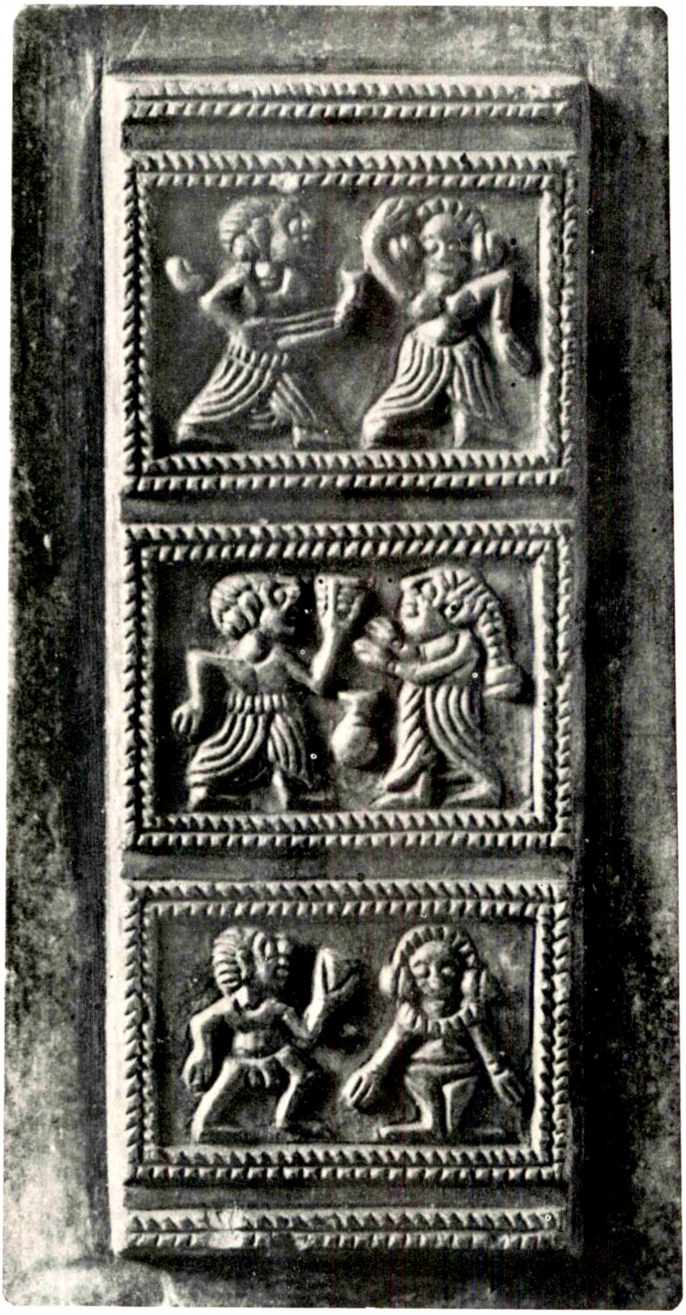
Courtesy, Department of Archæology, Government of Andhra Pradesh

b. Yeleswaram. A megalithic burial showing two human skeletons one over the other. See p. 81



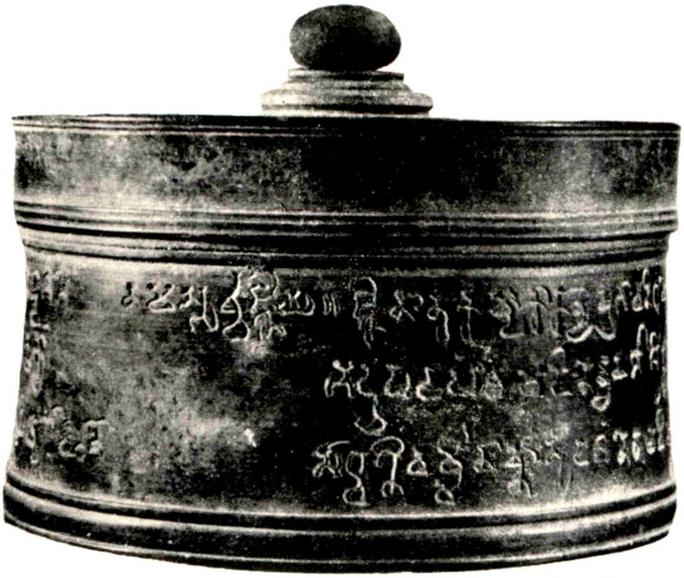
Courtesy, Archæological Survey of India

Burzahom. Human burial, Phase III. See p. 79



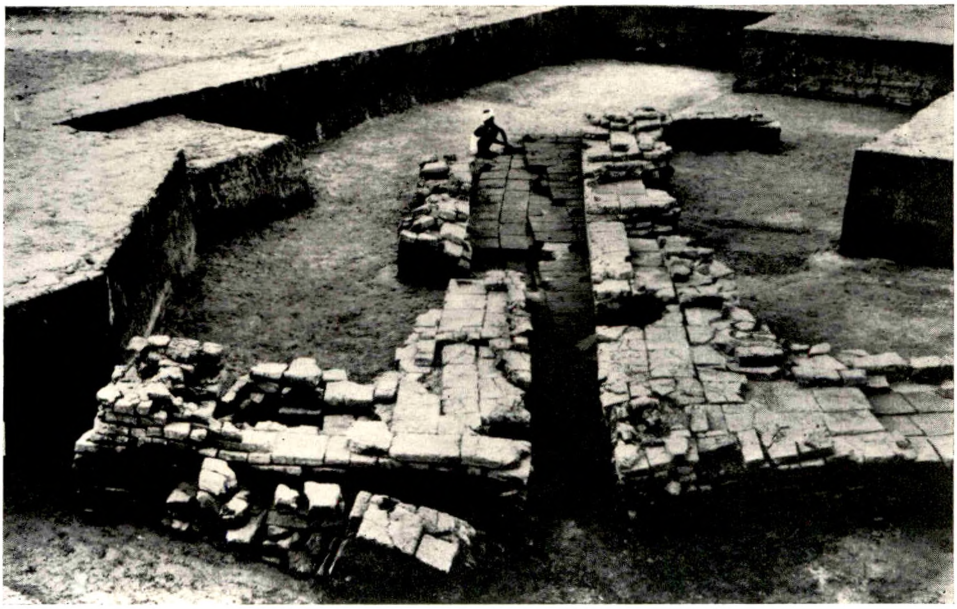
Courtesy, Archæological Survey of India

Rajgir. A sculptured steatite plaque (size $5\frac{1}{2} \times 3$ cm.), from a pre-defence deposit. See p. 82



Courtesy, M.S. University of Baroda

a. Devnimori. Inscribed relic-casket. See p. 83



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7

Republic of Madagascar

PIERRE VÉRIN

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FIELD WORK

In April 1963 excavations were undertaken by Battistini and Vérin in the Vohitrandriana site (near Lake Alaotra), discovered by Molet in 1956 at Vohimasina. This hill-top site dominates the marshy grounds which border the lake; the dense settlements on the top were enclosed with concentric moats; the remains of an old royal burial may still be seen.

As the Sihanaka perform their traditional ceremonies on the site, excavation work could only be done on the slopes and at the foot of the hill. The cross-section at the foot of the hill, made by the road, was examined eight years ago by Molet; but the stratigraphy of three thin layers which he reported was not confirmed by the new study we made. All the pottery, iron, and bone artifacts *in situ* belong to the same unique layer under 20 centimetres of humus soil. Traditional history mentions the destruction of the settlement by Merina invaders at the very beginning of the 18th century and the C-14 analysis dates the artifacts to the 18th century A.D.

The pottery in the Sihanaka area still retains the old forms of jars, *brûle-parfums* (incense burners) and other vessels, and shows a marked decline in workmanship. There are no more decorations of various impressed motifs or surfaces blackened with graphite or reddened with ochre. This recent decline in pottery-making seems general all over the Island, from other evidence.

Discoveries of earlier occupation may be expected, as a layer up to one metre thick, with numerous traces of charcoal, can be seen in cross-section below the pre-Merina culture layer. No artifacts have been recovered from the layer as yet. It may belong to a forest period and it is hoped that future carbon-dating and pollen analysis will reveal the role of man in deforestation and the time that it occurred, which was also probably the first occupation of the region. The sterile layer under the historical deposit should be the alluvium which covered the presumed forest horizon after deforestation. Erosion of the deforested soil may have been accelerated by digging moats in the final period.

In June, Battistini and Vérin made a survey of the coastal sites between Tulear and Androka in the southwestern part of the Island. Kitchen middens were discovered among the dunes at Sarodrano and Bevoalavo. They contain pottery and accumulations of shells and fishbones. Their location and content remind one of the sites near Talaky tested the year before and dated to the 12th century. The party also investigated the numerous rock shelters located in the cliffs east of the coastal Mahafaly Plain, around 25 kilometres from the sea shore. Test excavations revealed that the shelters have been occupied only recently.

During this field trip an old site containing subfossils was rediscovered near Itampolo. It had been studied more than fifty years ago by the zoologist Lamberton. The site lies a little inland beyond the Flandrian dunes; many portions are still undisturbed and bones of *Hippopotamus lemerlei* have been sent for C-14 dating. The disappearance in Madagascar of forms such as *Aepyornis* and *Hippopotamus lemerlei*, like the deforestation of the highlands, occurred in protohistorical times. These changes of fauna and flora are due to the disruption of the primitive ecology by man. The forms were probably not killed off by hunters but died after the first inhabitants destroyed huge areas of forest by slash-and-burn agriculture and fires for pasture, resulting in new climatic and hydrological conditions.

No Rasikajy site has been excavated yet but two new sites were recently discovered by R. Battistini in the northeast, one near Mananara, the other at Irodo, south of Diego-Suarez. The date obtained from the Irodo site (see below for list of C-14 dates) is now being rechecked.

At the end of March 1964 Vérin and Ramilisaonina initiated a survey of several sites of South Betsileo near Fianarantsoa. The party visited the refuge caves of Isorana and Antranolozoka, the famous burial caves of Vohitsisaky and Tomany, and the site of the old capital of Ifandana. The refuge caves and the village site will be mapped and excavated in the near future.

A questionnaire has been sent to the local officials of the smaller territorial units (the *communes rurales*) to gather systematic data on the archæological sites of the whole island. The text in Malagasy was prepared by S. Raharijaona and P. Vérin. A more complex questionnaire in French (*L'inventaire ethno-topographique*) has been prepared by J. Poirier to be used by trained field workers in anthropology.

The following is a list of the C-14 dates processed by the Nippon Gakushiin (Japanese Academy) Radiocarbon Laboratory, Japan, which does work for Madagascar archæology:

CODE NO.	SAMPLE NO. AND DESCRIPTION	MEASURED DATE IN YEARS BEFORE 1950
Gak-276	Talaky—S2–C4–5	840 ± 80
Gak-338	No. 1, Vohitrandriana cut A—D—13	Modern, 250
Gak-347	No. 4, Vohitrandriana Lavaka South-West	Modern, 250
Gak-348	No. 5, Fossil coral from Itampolo (recent change in sea level)	860 ± 100
Gak-380	Charcoal from Irodo (this date is being rechecked)	1200 ± 140

RESEARCH

Art and Technology

The Département d'Art et d'Archéologie has acquired several thousand specimens for the Musée d'Art et de Civilisation Malgaches, financed by the Joint Franco-Malagasy Committee for Aid to Education. Negotiations are under way for the purchase of the Charles Poirier collection for the Museum. E. Vernier, in his catalogue and his study of the engraved bamboos (listed in the following bibliography) gives an account of that collection.

In February 1964 the Department opened an exhibition of Malagasay pottery with over 700 objects on display. The public came in larger numbers than for the display on Sakalava art the previous year. A catalogue was published for the show (see Book Review, p. 132). A moving picture on 'Pottery in Madagascar' is being made by M. Fournel, J. C. and M. Hammer, and Ch. Richard.

Another exhibition on the Art and Culture of the Zafimaniry (an ethnic group living between Ambositra and Ambohimanga du Sud and mentioned by R. Linton in his monograph on the Tanala) is now being prepared. More research on Sakalava and Antanosy art is being carried out by members of the Department.

Among recent books published outside Madagascar is Mrs Urbain-Faublée's *L'Art Malgache.* It summarizes the main problems in Malagasay art, though many aspects, such as pottery and basketry, are left out. The chapter on comparisons with Southeast Asia and Oceania is very weak.

M. Dominjoud's study of some of the magic items and beads of the Russillon collection in Geneva's Ethnographical Museum is of interest. The artifacts are carefully described and well illustrated.

Anthropology

At the University, the Département des Sciences Humaines is largely responsible for teaching and research in anthropology. Members of the Department are: J. Poirier (Ethnologie), J. W. Lapierre (Sociologie), Mullier (Statistiques), Razafimpahana (Psychologie sociale), Chippaux (Anthropologie physique), J. Dez (Linguistique). In the Département d'Art et d'Archéologie are: R. Mallet, P. Vérin, and N. Boulfroy. Both departments unite in presenting the newly created degree of 'Histoire de la Civilisation Malgache'. Human Geography is under the responsibility of the Geography Department headed by R. Battistini.

J. Poirier gave several talks on Malagasy Culture History over Radio Université. He has been carrying on field studies in the Bezanozano area. He recently discovered, in the dried marshes of Didy, a huge carved canoe called *lakamena.* It is now in the Museum's collections at Tananarive.

Dez has written a series of articles on Malagasy dialectology and one on traditional attitudes and progress in Madagascar. L. Molet's study of currencies will prove useful to anthropologists and economists. S. Raharijaona and Vérin's description of the Merina kinship system and a summary of the results of the Comoros anthropological survey by Robineau have also appeared. In his careful appraisal of the use of magical procedures and the behaviour of peasants, H. Lavondès presents a new method for culture and personality studies of Malagasy societies.

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8

Malaysian Borneo

BARBARA HARRISSON

Received 4 May 1964

ACTIVITIES OF THE SARAWAK MUSEUM

Personnel and Contributions. The sudden, sad death of Mr George Jamuh, M.B.E., on 20 February 1963 at the age of 52 caused great distress to all in the Museum, where he had served as Assistant Curator since 1955 with wide and wise understanding. He had specialized in native custom, folklore recording—with emphasis on the Melanau—and his contributions were published over recent years, in the *Sarawak Museum Journal.* He has no successor until Mr Lucas Chin returns from Hawaii where he continues his specialized museum and academic training at the East-West Center. The Museum's archæological assistant, Mr Richard Nyandoh, returned in March 1964 from Sydney where he had been training under Professor W. R. Geddes, attending lectures on archæological prehistory and social anthropology, as well as gaining wide experience in field work.

In connection with the political efforts towards the formation of the Federation of Malaysia, the Curator activated closer ties between the existing Museum and research units of the Federation. Sarawak personnel helped with the establishment of the new National Museum in Kuala Lumpur, attended a council meeting of the Malayan Branch of the Royal Asiatic Society in July 1963, and participated in the formation of the Malaysian Society of Orientalists. A young trainee from Sabah, Mr Michael Chong, received tuition throughout 1963–4 in the Sarawak Museum, especially in archæological techniques. He is later to work in Sabah where a nucleus Museum unit will operate from September 1964. Awangku P. K. Shariffuddin, after several years of training in Sarawak and later in England, returned with the Diploma of the Museums Association in July 1963, to start a new Brunei Museum. Two new trainees from Brunei were installed in the Sarawak Museum at the same time, for two years. Through these ties with the adjacent states of Sabah and Brunei, it may be possible to extend archæological and other field work, using comparable methods and interchangeable personnel, to west Borneo.

While on long leave in East Africa, Europe and the U.S. (September 1963–April 1964), Mr and Mrs Harrisson attended the 8th General Assembly of the International Union for the Conservation of Nature in Nairobi, Kenya (September 1963) contributing on Orang-utan, Niah Cave and other Southeast Asian conservation issues. They also attended an International Primate Conference in Frankfurt, Germany (December 1963) reporting on current primate research undertaken in Sarawak.

Mr Tom Harrisson gave the Asia Dickson Lecture in the Royal Geographical Society of London (September 1963) on ancient cultures in central Borneo; and a more general account of the last fifteen years' work by the Sarawak Museum, to the Royal Society of Arts in London (November 1963), under the title '100,000 Years of Stone Age Culture in Borneo' (Harrisson, T., 1964*a*). He also lectured and led seminars at Cornell, Yale and New York Universities during April 1964.

Folklore and Linguistic Studies

Dr H. S. Morris of the London School of Economics returned to Sarawak in July 1963 to complete a study of the Melanau of the Oya River, begun there in 1948. Mr Tuton Kaboy of the Sarawak Museum assisted him for seven months, first in collecting material on economic and other changes which had taken place since 1950 and, more particularly, in the collection of material relating to the folklore and history of the Oya River during the past 100 years. The cosmological, religious and magical ideas of the pagan Melanau community were also recorded. The growth of Islam in the area was examined and material collected for understanding the relationship of the older pagan religion to Islam, and the ways in which conversion had occurred. Copies of the field material collected were made available to the Sarawak Museum and separate articles will be prepared for publication in the *Sarawak Museum Journal* and elsewhere. Dr Morris proposes to publish a full monograph on the Melanau of the Oya River presently.

Mr C. Court from the Australian National University, Canberra, came to Sarawak in March 1964 for four months. He made a study of Land Dayak dialects in the Serian District of Sarawak's first Division.

Dr George Kahin of Cornell University visited Sarawak in June 1963. He discussed with the Curator possible long-term co-operation between the Sarawak Museum and the University on the archive and folklore holdings of the Museum, and co-ordination of these materials with new field studies at graduate and post-graduate levels. The initial phase of this project is now approaching completion, though it is too early to say how it will work out in detail.

Primate Anthropological Studies

The special behaviour study of young, semi-wild orang-utans was successfully continued into its third year at Bako National Park, Sarawak. A renewal grant was received towards this study from the Wenner-Gren Foundation. Dr G. H. Bourne, Director of Primate Research at Yerkes and Emory University visited the project in February 1963. He was followed by Dr R. K. Davenport, from the same institution, a year later. Dr Davenport discussed with Mrs Harrisson systematic methods of recording behaviour under jungle conditions. A full analysis and evaluation of three years' records is being prepared.

Mr Kenyi Yoshiba of Kyōto University spent three months (May–July 1963) in Sabah (North Borneo) where he assessed the problems of making a full study of the wild orang-utan, visiting three different habitat areas. He advised that a full study would require approximately six years of jungle work by a team of several field workers. Dr Davenport made similar test studies in Sabah shortly afterwards. His report is still outstanding, but he too met serious difficulties.

It is abundantly clear, from all serious work done to assess the problem of studying orang-utans in the wild, that no advantage whatever can be expected from short-term visits of specialists. A team of dedicated workers who set aside several years for the study is required now. They must be able and fit to work under hard jungle conditions and receive adequate finance. If this is not forthcoming over the next two or three years, it will probably be too late. The only workable areas are at present in Sabah—some of them declared out of bounds for security reasons.

The studies of captive tarsiers was continued into 1963, but breeding results were not obtained. A provisional behaviour analysis, including description of mating habits, was published (Harrisson, B., 1963*b*).

ARCHÆOLOGY

A. Indoor Studies

Chinese Ceramics. Mrs Eine Moore has reviewed, analysed and classified the Sarawak Museum's 2,000-piece reference collection into distinct types of export ware, covering all periods from T'ang to the present day.

The ceramics in this collection were acquired by the Museum within Borneo over the past 60 years. In many instances, they are paralleled by specimens obtained on archæological sites since 1947.

An attempt was made at the same time to advance the understanding of the earlier types of export wares by relating them to existing sherds from kiln sites and excavation sites outside Sarawak, with the help of foreign scholars. Miss Mary Tregear (for some years at the University of Hong Kong and now with the Ashmolean Museum, Oxford) has been particularly helpful on early Yüeh stonewares and porcelains which she is studying in detail.

Mrs Moore and Mrs Harrisson have prepared a new display in the Museum's ceramic gallery. All exhibits are dated as closely as possible and related to ancient kiln sites and trading routes from the mainland into Borneo. Detailed information on ancient uses of Chinese ceramics by the native peoples of Sarawak—notably the Melanau—has also been made available. A full catalogue to the gallery and relevant information on the collection is in preparation.

Glass Beads. Since our report in *AP*, 7: 48 we now know that there are relatively high quantities of lead as *plumbum oxide*, in monochrome glass beads from the Kelabit uplands; the latter have regularly more than 5% PbO. Characteristic monochrome beads analyzed so far from Sarawak River Delta excavations in southwest Sarawak (as from Kuala Selinsing in Malaya, and other sites in Southeast Asia) seldom show more than traces of lead, and have, in other respects, a different chemical content. It is suggested that the lead-less glass was probably brought from the Middle East, whereas the lead-heavy glass could have penetrated through Brunei Bay into the interior of Borneo from a different source or along an alternative trade-route and time-scale. Additional material is now being analyzed at Corning Glass Museum, New York. Beads and related problems to date have been discussed by T. Harrisson (1964*b*).

A quantitative analysis of beads and other materials obtained from a 19th century Melanau burial, excavated at Song on the Rejang River in 1964, showed some surprising results. Associated with 4 ceramic objects, 11 brass bowls and bangles and 4 others (plus small fragments of human teeth and skull) were a total of 32,464 beads, 31,877 of which were of glass and the remainder simple cornelians and brass beads. Of the glass beads 31,751 were monochromes, 126 were in two colours (striped), nearly all dark and very crude.

The kinds made in Sung China are not found in earlier excavation sites nor are they in present use. Dutch 17th century beads and other well-known types were also absent from this site.

Other Metal Finds. A very beautiful golden kris-handle, probably Javanese of the 13th or 14th century A.D., was obtained from the Melanaus of Balingian, near Mukah in the Third Division of Sarawak, who had used it as a sacred charm. A remarkable bronze turtle in 'Dongson style' was collected from a *Kayan* in the headwaters of the Baloi, in the far interior of the Third Division. This latter is clearly related to the superb bronze figure of Imun Ajau, which came from the same area. The Curator showed in on his travels throughout Europe and America, where it was accepted as perfect and unique of its kind. The special point about this figure is that the head-dress unmistakably represents a rhinoceros hornbill, a species unknown on the Asian mainland. A full illustrated account of Imun Ajau is given in *Artibus Asiae* 27(2) 1964: 1.

Stone. One of the puzzling features of the Borneo stone-tools assemblage is the occurrence of adzes which are distinctly crescentic in cross-section. These are generally very poorly represented in Southeast Asia, though they occur regularly in casual ground finds above 3,000 feet in the remote Kelabit uplands. During 1963, a single specimen was unexpectedly found in a guano deposit in the dark, well inside the Great Cave at Niah (none have been found in the stratification of the excavation site). Two more were unearthed in the same year by a mechanical excavator on the Tarat agricultural estate near Kuching; there were no associated objects. The crescentic adze seems to represent some special and not yet understood element towards the end of the Stone Age.

Human and animal bone remains. Dr Calvin Wells analysed in detail two neolithic burials from a cliff-site at Niah, Lobang Jeragan, a burial cave mentioned in *AP*, **5**: 64–5. Dr Yim Khai Sun studied and reported on a human jaw from Semporna (in Sabah) and teeth and jaws from Gan Kira at Niah. He also continued a statistical study of all separate human teeth found in the Painted Cave at Niah and elsewhere.

Dr D. A. Hooijer gave further identifications of mammal bone from the deepest sections of the Niah Cave excavations; Lord Medway and the Earl of Cranbrook also generously continued their studies of other bone material (*v. AP*, **6**: 219–229). Thus we are gradually obtaining a full picture of its Pleistocene fauna. Of exceptional interest, to biologists as well as archæologists, was the identification by Cranbrook of a Lesser Moonrat *(Hilomys suillus)* at the level of approximately 38,000 years old (by C-14), at only 100 ft. above sea level in Niah. This remarkable nocturnal insectivore has never before been found below the fully montane levels of over 3,500 feet in Borneo, throughout Malaya and to the Himalayas.

These studies are now being greatly strengthened by a further grant of $15,000 by the Gulbenkian Foundation of Lisbon, which has been supporting Sarawak Museum work at Niah since 1959.

B. Field Studies

During the absence on leave of the Curator, no large-scale excavations took place at the Niah Caves during the period under review. However a series of smaller excavations were carried out elsewhere in Sarawak by the Sarawak Museum staff—mainly following up reports by local residents on finds which they had made.

Thus the secondary school at Kanowit in the Third Division reported quantities of broken ceramics after clearing the ground adjoining their school. A Museum party traced the remains to a 19th century Melanau settlement and burial ground, which was abandoned in 1859 after a punitive expedition of the Rajah Brooke's Government following the killing of two European Government officers there. Full excavation was not possible because parts of the old Melanau burial ground are still in (Mohammedan) use.

In a series of hill sites near Saratok in the Second Division, broken ceramics were reported by the local population and Government Officers. Trial excavations at three different sites proved the presence here of early occupation or trading activities with abundant ceramic evidence going back to the T'ang and Sung dynasties. Types previously obtained in other Sarawak sites, notably at Lobang Tulang at Niah, and in the Sarawak River delta of the southwest, were obtained. Blue-and-white sherds of later date were concentrated in one area which remains to be explored. The presence in the ground also of very recent ceramics of the past 100 years or so, completed the picture of continuous occupation in later days of an area which a thousand years earlier had similarly been occupied and then abandoned. Saratok has now a population of 3,000, with 70% Malays and Ibans (mostly farming) and 30% Chinese (mostly trading). Before 1800, the area was inhabited by the Serus—a tribe now extinct—who were driven off the land by immigrating, warlike Ibans. Further detailed investigations are in hand with folklore and other material we now have on the Serus.

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9

New Zealand

OWEN WILKES

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The rapid progress of New Zealand archæology on all fronts in the last few years has been due largely to enthusiastic co-operation between a very few professional archæologists and a large body of amateurs. 1962 was something of a peak year for publication of excavation reports and interpretative essays. With three New Zealand institutions now operating in the Pacific as participants in the Pacific Area Archæological Program (see *AP*, 5[1] 1962: 71–78) the New Zealand scene has been a little quieter. It was remarked in the previous report (*AP*, **7**: 65–74) that publication in New Zealand has, in these years of rapid progress, been more in brief interim reports, etc. and short in fully documented excavation reports; and this continues to be the case.

FIELD WORK

Wairau Bar. Since the publication of Duff's *Moa-hunter Period of Maori Culture* (1950) Wairau Bar has tended to be the type locality for the earlier culture of New Zealand, whether this culture be called Moa-hunter (Duff 1950, 1963), Archaic (Golson 1959) or East Polynesian I (Golson and Gathercole 1962). Wairau Bar has been known mainly through the rich assemblage of grave goods excavated in the forties, but a new phase in excavation, begun by Robert E. Bell in 1956 (*AP*, **1**: 135) is now widening our knowledge of what will continue to be an important site. A one-month excavation by a Canterbury Museum party this summer showed a complex occupational layer with evidence for succession of structures and change in the function of various areas. Midden analysis suggests that although the large moa *Euryapteryx gravis* was once the principal food source, towards the close of occupation there was a dependence on shellfish and fish, moa being rare enough to warrant the caching of good quality bone for artifacts. Large quantities of moa eggshell suggest that the taking of eggs may have been a primary cause of the moa's extinction locally.

Heaphy River. The rugged and heavily forested west coast of the South Island is practically unknown archæologically, despite indications from the site survey that in Moa-hunter times it must have supported a considerable population, and its obvious importance as the source of most of the nephrite used throughout New Zealand. A series of excavations by the Canterbury Museum at the Heaphy River, carbon dated at 1518 ± 70 A.D. show that at this date a small moa, *Anomalopteryx didiformis*, was still hunted in reasonable quantities and that already there was a considerable utilization of nephrite. Artifact material provenance and the duplication of Wairau Bar traits indicate many contacts with the rest of New

Zealand despite the geographic isolation of the site. A notable feature was the presence of three small stone pavements, one with a raised kerb, similar to those of central East Polynesia. Clustering of certain artifact types and reject flakes suggest that woodworking and the manufacture of fish hooks were done on these pavements.

Poukawa. A further step in pushing back the date for initial occupation in New Zealand (see *AP*, 7: 65–72) is contained in an interim report on moa-bone middens at Poukawa (Price 1963). Deposits of moa bone with shafts broken for its marrow, heated freshwater mussel shell, and carbonized wood were excavated beneath a pumice layer thought to have been deposited about A.D. 150. Confirmation of man's presence were spalled stones, and cut and sharpened pieces of wood.

Chatham Islands. An expedition to the Chatham Islands organized by D. R. Simmons, Otago Museum, has shown dendroglyphs and petroglyphs to be much more abundant than was formerly thought; but many are now on the verge of destruction by natural agencies. 800 dendroglyphs and 6 petroglyph sites were recorded and 100 other sites noted. It is hoped to date some of the petroglyphs by C-14 determinations of nearby oven areas.

The National Site Survey and Site Protection. Site recording and surveying continues to be one of the principal concerns of the New Zealand Archæological Association. Several articles in the *N.Z.A.A. Newsletter*, especially in 6(3), record progress in this field. The files are now sufficiently complete on sites of sufficient importance to warrant legislative protection, for which there is so far no provision. As the chances of getting more than a small number of sites protected are slim, the category of nationally important sites is being kept as small as possible. The following is the basic classification now in use (Green 1963*a*).

a. *Sites of national historic importance*
   Scheduled and protected sites.
   i. Permanent preservation.
   ii. Interim preservation—salvage operations are contemplated should there be further destruction of the existing site.

b. *Archæological remains*
   Sites which are recorded but for which no protection is sought.
   iii. Remains worth excavating and recording if time, labour and money are available.
   iv. Remains worth recording but not excavating.
   v. Destroyed—sites of which no visible features remain.

DATING

In the preceding New Zealand report [*AP*, 7] the earliest C-14 dating for cultural activity was quoted as A.D. 780 ± 65 years, for a post butt in Redcliffs Cave. It is now found that a clerical error had been made by the Institute of Nuclear Sciences and that this date actually applied to charcoal from a Maori oven near the mouth of the Cave. However the date itself of A.D. 780 remains.

T. A. Rafter, Director of the Institute of Nuclear Sciences, has concluded from recent work that moa bone is an unreliable dating material, owing to the likelihood of carbonate contamination. This is illustrated by a post butt from Redcliffs Cave which was dated at A.D. 1304 ± 25 years, while a moa bone inserted alongside the post, and presumably contemporaneous, was dated at A.D. 1422. The possibility of contamination makes doubtful such a startlingly recent dating for midden moa bones as the 1670 ± 60 date of Lockerbie for *Dinornis* (*AP*, **1**: 136).

An appraisal of archæomagnetic methods as a further means of dating in New Zealand is being carried out by J. W. Gellen of the Physics Department, Victoria University. Stones from the lining of earth ovens have been tested and found to have sufficient remanent magnetism, and the archæological evidence suggests that the stones are frequently undisturbed in such ovens. There seems then to be a good chance of this method being successful.

SYNTHESIS AND INTERPRETATION

The major contribution in this field has been Green's *Review of the prehistoric sequence in the Auckland Province* (1963*b*). Green discusses a conceptual framework for the interpretation of New Zealand prehistory, gives a more detailed presentation of the sequence of phases summarized in the previous New Zealand report (*AP*, **7**) and describes numerous sites as examples of each phase. He notes that in the Auckland Province there is no evidence for cultural intrusion in the middle of the sequence; rather, he sees a steady evolution from the New Zealand East Polynesian culture (Settlement, Development, and Experimental phases) to the Maori culture (Proto or Pa Maori, Classic Maori and Early European Maori phases). Only south of Auckland is there evidence for site-unit and trait-unit intrusion (Maori culture supplanting New Zealand East Polynesian) which probably originated from Auckland rather than from outside New Zealand in the form of a 'fleet' migration in 1350. The development of kumara agriculture in the ecologically more favourable north would precipitate this evolution of Maori culture at a faster rate than in the south. The probability that trait units were introduced to the Auckland area, especially the kumara, is allowed.

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10

Australia

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Field Work and Research

1963 was an eventful year in Australian archaeology. The new teaching courses in the universities, and the financial support of the Australian Institute of Aboriginal Studies and the Nuffield Foundation, have promoted a wide range of excavations and valuable surveys of aboriginal relics *in situ* in various parts of Australia. At the present time excavations are or have been carried out in three parts of the Sydney area by V. J. Megaw, R. S. V. Wright and D. Miles, northeastern New South Wales by Miss McBryde, southeast Queensland by Dr D. J. Tugby and V. Ponosov, Cape York by R. S. V. Wright, Northern Territory by D. J. Mulvaney and J. Golson, Western Australia by I. Crawford, South Australia by G. Pretty, Dr T. D. Campbell and Dr P. S. Hossfeld, Tasmania by Rhys Jones, and southern New South Wales by J. Golson. Many of the sites dug contain deposits of considerable depth, rich in artifacts, and among the interesting results obtained is the important evidence on gum-hafting of stone implements on the Hawkesbury River by Wright, and the discovery of a fossil rodent and the bones of living species of mammals unrecorded in the Coorong area of South Australia by Campbell and Hossfeld.

Several summaries of Australian prehistory were published. Following on discussions of a revised nomenclature of Australian cultures submitted by him to a conference held in Sydney in April, F. D. McCarthy applied a modified version of the Willey-Phillips system to our assemblages. Thus the Capertain, Bondaian and Eloueran were included as three phases of an Eastern Regional Sequence, and the Tartangan, Pirrian and Murundian as three phases of the Tula Regional Sequence. The northern Kimberleyan, Milingimbian and Oenpellian assemblages require more stratigraphical data to fit them into a regional sequence. He believes that the Kartan and Gambieran, both undated, form two earlier phases of the Tula sequence than the above three. J. J. Birdsell based his Cowa survey on the nomenclature of Tindale, adopting the latter's cultural divisions for the whole continent whereas they are only partly valid for the inland region of the continent. He accepted the Mudukian as a valid culture although it has been eliminated from the sequence by most other archæologists, and also wrongly included the Capertee Valley assemblages (Capertian and Bondaian) as Tartangan and Mudukian. To explain the lack of geometric microliths in the Mudukian at Devon Downs he suggested that we should accept unchipped amorphous pieces as their equivalent. He suggested that the geometrics could become a broad cultural marker in Australia, that time diffusion studies of the ground-edge axe and *pirri* point are urgently required, and discussed the antiquity of the dingo.

D. J. Mulvaney published a date of 10,950 ± 170 B.C., and subsequently announced one of some 14,000 years, from the Kenniff cave site in Queensland which establishes the arrival of man in Australia in late Pleistocene times; the oldest stone implements in the site indicated that the Tasmanians were the first people to reach Australia, he thought, but he has now rejected this opinion.

In a special issue of *Australian Natural History*, W. R. Browne described the varying temperatures and changing sea levels during the Great Ice Age, and suggested that man crossed to Australia during a period of low sea level. E. D. Gill believes that the extinction of the giant vertebrates has been a continuing process to which, at the end, the aborigines were a contributing factor.

More recently, however, an extremely interesting series of C-14 dates have been announced in *Radiocarbon*, of which the following is a summary:

In Vol. 4, 1962—Professor R. A. Stirton and Dr J. D. Tedford's sample from an apparent hearth in the top of the fossil-bearing site II of Tedford at Lake Menindie, western New South Wales, yielded 26,500 ± 1500, claimed to date an early human occupation and a rich assemblage of marsupials, including giant species, thought to be of Pleistocene age, the most ancient date for man in Australia. The comment states that the Colongulac (western Victoria) and Keilor (southern Victoria) evidence indicates that the extinction of most of the giant placental mammals took place in Australia between 13,700 and 8,500 years ago. Excavations by D. J. Mulvaney on Mt. Moffatt Station in Queensland yielded dates (pp. 37–8) for two sites. Two from the tombs were 3400 ± 97 B.P. (1450 B.C.), at 2 ft., associated with geometrical microliths, and 3600 ± 93, at 3 ft. 6 in., associated with an unnamed assemblage of implements. Those from the Kenniff cave were 2550 ± 90 (600 B.C.), at 2 ft., and 12,900 ± 170 (10950 B.C.), at 6 ft. 3 in.

In Vol. 5, 1963—Two dates (pp. 158–9) from the Murray River cave at Fromm Landing, South Australia, excavated by D. J. Mulvaney, were 3240 ± 80 (1290 B.C.), at 4 ft., marking the beginning of deterioration in stone and bone working at this site, and 4,800 ± 100 (2850 B.C.) from the lowest level, which contained geometric microliths and uniface *pirri* points. A date (p. 128) obtained by N. B. Tindale from Cape Martin, South Australia, was 8,800 ± 120 (6850 B.C.) in layer B, at the same horizon as so-called Tartangan artifacts. Mulvaney also obtained a date (p. 159) from a rock shelter at Glen Aire, Victoria, of 370 ± 45 (A.D. 1580), at 5 ft. 8 in. to 6 ft., layer 4, at the lowest level of bone points similar to those from Warrnambool dated at 538 ± 200 B.P. Three dates (pp. 127–8) were obtained by Dr L. F. Marcus from the above Lake Menindie site. Two from the surface in layer B, area II, and layer O, area IV (for so-called Mudukian stone implements), were modern. The other one was 6,750 ± 100 (4620 B.C.) for late Pleistocene extinct and recent mammals, and so-called Tartangan artifacts. This date is now thought not to apply to this assemblage. E. D. Gill obtained a date (p. 159) of 15,000 ± 1,500 (13050 B.C.) from a carbonaceous lens, at 6 ft. 9 in., below a diastem in the Keilor Quarry, and one of 8,500 ± 250 from 2 ft. 6 in. above this diastem. The Keilor cranium came from or near this stratigraphical level. A date of 18,000 ± 500 (16050 B.C.) came from 5 ft. 9 in. below the level of the cranium. T. L. Smith revealed a date (p. 328) of 11,140 ± 160 (9190 B.C.), at 2 ft. 5 in., from a levee bank probably associated with an aboriginal midden at Darlington Point, New South Wales.

The antiquity of man in Australia is now authenticated from stratigraphical sites back to 12,900 years; but a much greater period of time is indicated by various dates back to 26,500 years, although more corroborative evidence to support the latter series would appear to be necessary. Many interesting dates were also announced in these volumes of *Radiocarbon* bearing on the problems of higher and lower sea levels than at present, and on climatic changes in various parts of Australia.

The study of rock art is progressing steadily. Rock engraving sites are being recorded in the Sydney area by I. Sim, in the Flinders Ranges by R. Edwards, and in northern Western Australia by B. J. Wright, as non-professional projects financed by the Australian Institute of Aboriginal Studies. Similar work is being carried out by J. B. Rowlands and T. Brown. As a result of the detailed recording of sites McCarthy has been able to establish a sequence of four phases of rock engraving—abraded grooves, outline, linear design, and pecked—which are of continental significance. He has shown that the various sequences of changes in cave painting styles, colours and subjects in eastern New South Wales, Groote Eylandt, and western Arnhem Land are local in occurrence. The Western Australian Museum has begun to excavate selected sites of the Wondjina caves in the Kimberleys, recording the paintings and their meanings; and H. Coate is recording this mythology in the native language in the central Kimberley area. Birdsell stressed the urgent need for this kind of study while living informants are still available.

At a Symposium on Primitive Art held at the Royal Anthropological Institute in London, C. P. Mountford claimed that Australian aboriginal art is (1) ritualistic, in which the designs are traditional, (2) secular, in which the artist has complete freedom limited only by the poverty of his culture, and (3) magical, as used in increase rites and sorcery, although he believes it to be predominantly non-magical. The conclusions in this paper are based upon the author's own research particularly in central Australia, and do not take into consideration much work done elsewhere. The discussions on change in aboriginal art, and abstract art in Australia, do not mention existing evidence which indicates strongly that the concentric-circle and concentric-diamond motif complexes diffused into Australia and did not develop here. Nor do they mention the sequences of change that have taken place in rock engraving and cave painting. Again, Mountford and Edwards described the range of linear and pecked designs in the important Panaramittee engraving site in the Flinders Ranges, but they did not study the superimpositions nor attempt to equate the styles, subjects and techniques with the well-established chronological sequence of continent-wide significance, even though their figures 3*c*, 5*h*, 7*b*, 11*g* and S, and pls. 1A and B, and 2D, illustrate pecked figures engraved over linear designs; these are outstanding gaps in our knowledge of the Flinders Ranges sites.

The kangaroo and wallaby were revealed as major art motifs of continent-wide importance by McCarthy, and K. B. Redmond recorded over 100 sites of stencils in the Mt. Moffat area of Queensland. Among them is a unique stencil of a man. Kupka analysed in detail the bark painting art of Arnhem Land based on his field work in 1956 and 1960.

Papers on stone implements were few. Edwards described the range, manufacture, use and distribution of the reniform slate scraper in South Australia. K. A. Preiss described a large ritual artifact or millstone from the Flinders Ranges, and N. B. Tindale Tjurunga-like stone pendants from Queensland and eastern New South Wales. P. Gresser, in his papers on camp-site collections from eastern Australia, recorded geometric microliths and *pirri* points in western Queensland, on typical Tula Regional Sequence sites, extending their distribution considerably. The first part of another valuable paper in this field is a survey by J. E. Johnson of camp-sites in northern South Australia in which he described two new types, the *tjungani* muller with a convex working surface, and the *wardulka* flaked pick. He also noted uniface pebble implements in the area, a *juan* knife at Parabana, and many new site records for a variety of implements. Another first is Tindale's description of musical rocks, called *kondala* stones, at totem centres in South Australia, and portable sticks and stones used for the same purpose. He also recorded a new source of white pigment—crushed eagle dung.

In the only paper on material culture A. Massola claimed that the parrying shields of southeastern Australia originated in western-central Victoria as the Mulka type and evolved into several varieties elsewhere in Victoria and New South Wales.

Birdsell stressed the need for more studies of aboriginal foods along the lines of McArthur's; and of the food quest and time factor, like the one made by McCarthy and McArthur in Arnhem Land in 1948, especially in relation to the desert aborigines. Digby, in discussing the value of the method adopted in the latter paper, illustrated by example how the data provided could be used to demonstrate the relationship of hours worked by men and women in both the hunting and fishing economies, and the effect of providing for children. He believes the method could be applied to larger groups to supplement older, well established methods of research. M. J. Meggitt described many aspects of the life of food-gathering tribes in tropical Australia based on three climatic zones; and he contrasted the use of roots and nuts along the coast with that of seeds and solanum inland. He recorded the non-killing of dingo bitches and the planting (without subsequent cultivation) of *Dioscorea* and *Ipomea* stems as elementary attempts at conservation.

CONFERENCES

A conference on the *Nomenclature of Australian Implements and Cultures*, held at the Australian Museum on 25–28 April 1963, was sponsored by the Australian Institute of Aboriginal Studies. The convenor was Mr F. D. McCarthy. It was attended by 23 delegates. The eight papers read were intended to promote discussion and were not prepared for publication.

Wright ('The Typology of Stone Artifacts in the Old World') discussed the relative value of stone artifacts and pottery as archæological records, recurrent artifact types, typological procedures, abstracting and naming of classes, inclusion of *bondi* points and geometrics with backed blades and the various methods of subdividing the latter group, and gave a detailed explanation of Taylor's system of classification.

McCarthy ('The 1946 Classification') itemized 33 specialized implements whose names should be accepted, and 7 others whose status should be re-considered. He cited the similarity in form, and gradation in size, of the *elouera* adze and *worimi* chopper, *tula* adze and *arapia* chopper, *pirri* point and *leilira* blade, as anomalies not yet fully understood. He also discussed the confusion between *karta* and *arapia*, and claimed that the status of the *merna wadna*, *Adelaide* and *Paroo* points, *juan* and *jimari* knives, *ooyurka* and *yodda* tanged implements, and the *bogan* pick need re-consideration.

Mrs T. Kemp ('Quantitative Analysis of Flake Implements: Tasmanian Assemblages') described in detail a statistical method that she is applying to Tasmanian implements.

Dr D. J. Tugby ('Archæological Objectives and Statistical Methods') discussed the application of statistical methods to classification based upon the trait as the minimal unit to be organized into assemblages and defined in operational terms. The description and placement of the basic units in a space-time framework, and interpretation of the basic units in a cultural context form two general classes of archæological objectives, with four levels of interpretation—identification, distribution in space and time (uni- and bi-dimensional), and process analyses.

J. V. S. Megaw ('The Nature and Nomenclature of Cultures and Other Units of Archæological Organization—General Principles') discussed the status of archæology, history and science; unitary systems and models; and the archæological definition of culture in Europe, America and Africa of Childe, Taylor, MacWhite, Goodwin and others. He then considered the classification systems of Taylor and the Midwestern system of McKern with the variations of Willey and Phillips, and of Golson.

D. J. Mulvaney ('The Definition and Terminology of Australian Prehistoric Cultures') after outlining early views on aboriginal culture, discussed the potential of classification schemes in Australian archæology, concluding that the time is not ripe, and that not enough excavations have been done, for such syntheses. He supported the practice of using geographical names for prehistoric assemblages, and listed the antiquity, type artifacts and later additions of the twelve cultures named in Australia. He also assessed the status of these cultures. He stressed the importance of stratigraphical evidence, discussed the surprising variations of artifacts in adjacent sites, and the persistence of assemblages over long periods of time during which economic life remained the same.

N. B. Tindale ('Culture Concepts in Australian Prehistory') described the monocultural concept of Spencer, Howchin, Kenyon and Mitchell—the culture succession concept. He asserted that his own sequence of Kartan, Tartangan, Pirrian, Mudukian and Murundian is valid for the greater part of the continent, although he now admits to there being three living culture phases—Murundian, Milingimbian and Kimberleyan. He claimed that microlith-using people survived in coastal Victoria and in southwestern Australia, and *pirri*-using people in northwestern Australia. As the ground-edge axe is a late acquisition to Australia, some (retarded) Murundians possess it and other Murundians (advanced) do not. He divided the living aborigines into 18 groups as archæological examples, defined his own usage of culture and industry, and set out ten principles for developing a classification system in Australia. In describing his own work since 1924 the author reiterated his controversial views on the *karta*, *arapia* and *kodja*, and claimed that the *burren* slug derives from the *jimari* knife and not from the *tula* adze. He disagreed with the Multi-Cultural Concept that has developed in Australia.

J. Golson ('Space and Time in Australian Archæology') described a model scheme of classification based upon that of Willey and Phillips as applicable to Australia.

Professor N. W. G. Macintosh described the work that he has been doing on dingo remains, New South Wales coastal crania, and the Mossgiel skull.

At the end of the conference it was decided to appoint Messrs D. A. Casey (Convenor), R. S. V. Wright and I. Crawford to co-ordinate and distribute information from archæologists who have defined named types of stone implements in Australia. The Institute subsequently voted funds to enable this committee to operate.

The conference also recommended that a new unit or laboratory for testing C-14 samples from archæological deposits be set up, and that future conferences of this type be held from one to three years apart. It was ascertained from the delegates that about 170 C-14 samples would be collected in the ensuing year from archæological sites. After prolonged discussion the Conference decided not to set up a standard or 'official' nomenclature of Australian prehistoric cultures, nor attempt to solve the current differences of opinion, because the results of the widespread excavations now in progress will probably provide data which will have a significant bearing on these problems. It was the general opinion of delegates that a revision of the nomenclature would be of more value in two or three years' time.

A second conference sponsored by the Australian Institute of Aboriginal Studies was of Directors and Curators of Anthropology from Australian museums. It met at the Australian Museum on 29–30 April, under the chairmanship of Professor A. D. Trendall, and was convened by Mr F. D. McCarthy. The conference was called to discuss co-operation between the Institute and the Museums in the study of aboriginal culture. The scope of the collections in the various museums was described by delegates. The topics discussed included means and methods of filling gaps, use of special collectors, the urgency of field collecting, and liaison between museums and universities. The Institute's plan to establish Australia-wide catalogues of relics *in situ*, photographs, and collections of aboriginal material culture in all parts of the world was outlined, and the assistance of the museums sought in this project. After a long discussion about the export of ethnographic material from Australia and New Guinea, the conference recommended that the export of the following specimens should be banned: (1) skeletal material; (2) engraved and other sacred boards and stones; (3) ritual objects; (4) unique or rare types of stone, bone, shell or wooden objects; (5) material culture of New South Wales, Victoria, Murray-Darling Basin, Southwest Australia and Tasmania; (6) important collections of stone implements. It was agreed that museum officers concerned with the issue of export permits should abide by this list, but that special consideration could be given to permit the export of any of the above types of specimens to museums or scientific institutions abroad.

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1961, Aboriginal initiation ground found locally, *Tailings*, 5(1); 6(1–2).⁓Boomerang-shaped
1963 arrangement of stones.

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1962 Australia, 1957–1961, *Cowa Surv. Bibl., Ccl. Old World Arch.*, Area 22, No. II.

Discusses implications of dingo bones at Lake Colongulac 13,725 + 350 years ago with evidence that the dog did not arrive in Australia with the first aborigines; deals with Australian prehistory for the three years according to Tindale's lower Murray cultures, outlining different points of view involved; compares the Devon Downs and Fromm's Landing results; points out that the geometrics may become a broad cultural marker with localized point types; summarizes Arnhem Land excavations; rock art studies, need for diffusion studies in terms of culturally defined space; refers to Gates's and Abbie's views on tri-hybrid theory and significance of Tasmanoid-type skull found in the Niah cave.

BLEAKLEY, J. W.

1961 *The Aborigines of Australia*, Jacaranda Press, Brisbane.⁓Chapters I–II give a brief description of origin, daily life and material culture of aborigines.

BROWNE, W. R.

1963 Pleistocene and recent climates of Australia, *Aust. Nat. Hist.* **14:** 267–270.⁓Varying temperatures and changing sea levels in Great Ice Age, climatic changes in Australia whose first people arrived during a period of low sea level.

DIGBY, A.

1962 Time the catalyst: or why we should study the material culture of primitive peoples, *Adv. Sci.*, **19:** 1–9.

One of the main sections of the address emphasizes importance of studies such as that on the food by McArthur and on the food quest and time factor in economic life by McCarthy and McArthur, made in Arnhem Land in 1948; discusses alternative ways of analysing the data given in the latter paper, and suitability of method for study of larger groups of people.

EDWARDS, R.

1963 Preliminary survey of the aboriginal reniform slate scrapers of South Australia, *Rec. S. Aust. Mus.* **14:** 515–524.

226 specimens examined, 260 known, small proportion complete, 60% bear surface striations and 10% of them in patterns, ideally suited to dressing possum skins as Basedow's evidence suggests was their use and possibly linked with Kangaroo Island skin scraper; extends distribution to area from Woomera and Brachina Creek in north to coast in the south.

ELKIN, A. P.

1963 The aborigines: from the Stone Age to today, *Pix*, **71:** 27–38.⁓Short outline, well illustrated.

GILL, E. D.

1963 The Australian aborigines and the giant extinct marsupials, *Aust. Nat. Hist.* **14:** 263–66.

Animals of Ice Age were large and better able to withstand cold, their extinction was a continuing process and began before man entered Australia about 20,000 years ago, way of life and beliefs modified by disappearance of large vertebrates, traces of man in Maribyrnong alluvium and Doutta Galla silt older than known implement-bearing sites.

GRESSER, P.

1963 New distributional records of stone implements in New South Wales and Queensland, *Mankind*, **6:** 27–40, 80–87.

Describes camp-sites and tabulates implements collected on them on many station properties in region, typical Tula Regional Sequence assemblages throughout, with new distributional records for geometrics, *pirri*, *bondi* points, *juan* knives, and other implements.

GUIART, J.

1963 *Oceaniens: die Kunst der Südsee und Australiens*, Beck, München, 460 pp.⁓Brief review of Australian aboriginal art.

IDRIESS, I. L.

1963 *Our Living Stone Age*, Angus and Robertson, Sydney, 224 pp.⁓Describes *inter alia* various artifacts, economic life and relics *in situ* of Australian aborigines.

Johnson, J. E.

1963 Observations on some aboriginal camp-sites in South Australia and adjoining States, *Mankind*, **6**: 64–79. (To be continued).

Describes the collections made over twenty years on camp-sites in the (1) Olary-Willyama Highlands, (2) Flinders Ranges, (3) between Flinders Ranges and Pitjandjara Highland, and (4) Pitjandjara Highland. Artifacts tabulated from each site, records uniface pebble implements in interior of South Australia, and new types called *tjungani*, a muller, and *wardulka*, a flaked pick, and occurrence of *juan* knife at Parabana, many new distributional records for geometrics, *bondi* and *pirri* points among typical Tula Regional Sequence assemblages.

Kemp, Mrs. T. B.

1963 The prehistory of the Australian aborigines, *Aust. Nat. Hist.* **14**: 242–47.

History of early white man contacts, Meston's excavation of Rocky Cape cave, Tasmanian a single configuration of culture, stone implements divided into Midland-East coast, based on hunting and gathering economy; and West coast, based on hunting sea mammals. Cutting, scraping and mortars form three major groups; outline of culture; decline of population had begun before whites arrived; links between Tasmanian and Australian implements.

Kupka, K.

1962 *Un art à l'état brut: peinture et sculpture des aborigines d'Australie*, Introduction by A. Breton, Preface by A. Buhler. Clairefontaine, Lausanne, 195 pp.—A beautifully illustrated description of Arnhem Land bark paintings and sculptures, and of their meanings, and an analysis of various aspects of art in the culture of the natives.

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1963 3000 years proof of our hugest flood, *Riverlander*, **198**: 6–8.—Brief account of a stratified deposit in the Fromm's Landing site on the lower Murray River, demonstrating evidence of an ancient flood.

McBryde, Isabel

1962 Prehistory of northern New South Wales, *Educ. Gaz.*, **56**: 12.—Outline of survey of archæological relics *in situ* and of excavations done in region.

1963 Research into the prehistory of northern New South Wales, *Univ. Syd. Arch. Soc. Broadsheet.*—Early opinions of the aborigines and their culture, and brief account of excavations done in South Australia, New South Wales and Queensland.

McCarthy, F. D.

1963*a* The prehistory of the Australian aborigines, *Aust. Nat. Hist.* **14**: 233–41.

Introduces a new nomenclature of Australian prehistoric assemblages: the Capertian, Bondaian and Eloueran form three phases of the Eastern Regional Sequence and the Tartangan, Pirrian and Murundian three phases of the Tula Regional Sequence. The Kartan culture and Gambieran assemblage are regarded as earlier but as yet unproved phases of the latter sequence; and the northern cultures are regarded as assemblages. Outlines changes recorded as a result of studying superimpositions in rock engravings and paintings, and refers briefly to stone arrangements and other relics.

1963*b* Kangaroos and wallabies in aboriginal life and art, *Aust. Nat. Hist.* **14**: 174–8.—The methods employed to hunt these animals; the beliefs, rituals and art motifs they inspired; their importance in the everyday and ritual life of the aboriginal.

1963*c* Rock engravings in western New South Wales, *Aust. Nat. Hist.* **14**: 253.—Six photographs of Sturt's Meadows, Mootwingee and Euriowie engravings.

1963*d* Australia, *AP*, **6**: 59–64.—Annual review, for 1962, of field work and research, and other archæological activities, with bibliography.

1963*e* Archæology of western New South Wales, *Nature*, **1051**.—Review of paper by McCarthy and Macintosh on the archæology of Mootwingee, *Rec. Aust. Mus.* **25**: 249–98, suggesting that because the stone implements excavated cannot be related to the stencils, occupation of the shelters ceased well before they were made.

Macintosh, N. W. G.

1963 Origin and physical differentiation of the Australian aborigines, *Aust. Nat. Hist.* **14**: 248–52.

Current theories of the origin of the aborigines, comparison of latter with New Guinea natives, routes of migration of aborigines from Asia to Australia, relationship of Wadjak crania to Keilor skull, similarity in structure of forehead in Pithecanthropus-Soloensis types and in Talgai, Cohuna and Mossgiel crania, evidence from blood grouping, dermatoglyphs, hair colour, significance of Aitape and Tartanga skulls.

Massola, A.

1963*a* These relics tell tales, *W.* (May): 28–9.↵Camp-sites, oven mounds, sources of water, quarries, cave paintings, burials, tree disposal, canoe trees, and C-14 datings in Victoria.

1963*b* Aboriginal relics in Victoria, *Aust. Nat. Hist.* **14**: 254–8.↵Rapid extinction of aborigines, emu-track engraving, cave paintings, rock wells, vandalism, surface camp-sites, in Victoria.

1963*c* The parrying shields of southeast Australia, *Proc. Roy. Soc. Vict.* **76**: 227–32.↵Divides shields into three types, of which the domed and the Tawarrang evolved from the Mulka type in western Victoria.

1963*d* Native stone arrangement at Carisbrook, *Vict. Nat.* **80**: 177–80.↵A boomerang-shaped enclosure 96 feet long.

1963*e* Black Range shelters, *Vict. Nat.* **79**: 352–5.↵Shelter I contains a lizard and human figure in red, Shelter II some old red figures under white ones of an oval, bird tracks, three dancing human figures and other indeterminate symbols.

Megaw, J. V. S.

1963 Progress in Australian Prehistory, *Univ. Syd. Arch. Soc. Broadsheet.*

Points out that the dozen members of the Prehistory Panel of the Australian Institute of Aboriginal Studies comprise practically all of the professional archæologists in Australia; mentions lack of adequate training facilities, laboratories, centralized national museum of antiquities, and of an honours course in Australian and Pacific archæology; draws attention to great delays in C-14 tests, inconsistencies in nomenclature; and discusses some of the papers read at the Australian and New Zealand Association for the Advancement of Science Congress held in Sydney, 1962.

Meggitt, M. J.

1963 Aboriginal food gatherers of tropical Australia, Paper given at *Intern. Union Conserv. Nature Nat. Res.*, Nairobi.

Population and densities, variable environments, religious background to economic life. Cites rainforest economy of north-east Queensland, coastal economy and drier inland economy as three major zones, notes high vegetarian content of food, hunting by burning scrub, elementary attempts at food conservation

Moore, D. R.

1963 Wong-wong cockle shells, *Bulletin*, **85**: 18–20.

Mountford, C. P., and R. Edwards

1961 The artist and his art in an Australian aboriginal society, *The Artist in Tribal Society* (edit. Marian W. Smith): 1–14, and discussion, 21–32.

Brief outline of daily life, environment and religion of aborigines, importance of life essence *(kuranita)*. Art of Arnhem Land, Melville Island, and central Australia, isolation as a determinant, materials, art is predominantly non-magical, Pukamuni rituals and art, Arnhem Land sculptures derived from Macassan burial posts and those in northwest Australia from European sources. No evidence that cave art is used in hunting magic, use of Oenpelli cave art in increase rites, magical, ritual and secular art.

1962 The aboriginal art of Australia, *Oceania and Australia (Art of the World Series)* by A. Buhler, T. Barrow, and C. P. Mountford, London, 207–25.↵Brief outline of general culture and daily life, pigments, brushes, implements, pocked (*sic* pecked) and outline engravings, cave paintings, decorative art.

1963 Rock engravings at Panaramittee, northeastern South Australia, *Trans. Roy. Soc. S. Aust.* **86**: 131–46.

Describes main motifs in Panaramittee North and Hill groups, Salt Creek, and at the Rockholes, in which linear designs, pecked figures, and straight-line markings occur, compares subjects with western New South Wales engravings, discusses antiquity and techniques.

Mulvaney, D. J.

1963 Archæology in Australia, *Current Anthrop.* **4**: 357.

Microlithic industry in Mt. Moffat sites dated at 1,650 ± 93 B.C., 1,450 ± 97 B.C., and 600 ± 90 B.C., in one site hearths at depth of 7 feet are 10,950 ± 170 B.C., establishes late Pleistocene migration to Australia of man, and stone implements suggest that the Tasmanians were the first to reach Australia.

Preiss, K. A.

1963 An interesting stone artifact from the Flinders Ranges, *S. Aust. Nat.*, p. 53.↵A large flattish stone slab, with a groove at one end, of indeterminate type.

Pretty, G.

1962 Archæology in South Australia, *Ann. Mag. Lincoln Coll. Club, Univ. Adel.* **21:** 12–16.

Excavations on lower Murray River and investigation of Kangaroo Island implements, controversy on Australian nomenclature, fossil plant and animal evidence of man's antiquity in Australia, rock art, and institutions promoting research.

Read, Sir H.

1961 Art in an aboriginal society: a comment, *The Artist in Tribal Society* (ed. Marian W. Smith), London: 14–21.⌐Origin of art based on Australian data, use of abstract art to fill spaces; designs are spontaneous, informal or schematic and not pure abstract in Australia.

Redmond, K. B.

1963 Unique aboriginal stencil in Queensland, *Aust. Nat. Hist.* **14:** 271.⌐Red stencil of an adult aboriginal.

Sim, I. M.

1963 Records of the rock engravings of the Sydney District, Groups 111–116, 117–137, *Mankind*, **6:** 19–26, 55–64.

Teusner, R. E.

1963 Aboriginal cave paintings on River Marne near Eden Valley, South Australia, *Mankind*, **6:** 15–19.⌐Set of little human figures in white.

Tindale, N. B.

1963*a* A *tjuringa*-like stone pendant from New South Wales, *Rec. S. Aust. Mus.* **14:** 555–9. ⌐One from Albury District bears abraded grooves and linear designs, and a broken one from Queensland is undecorated.

1963*b* Totemic beliefs in the Western Desert of Australia, Pt. 2: Musical rocks and associated objects of the Pitjandjara tribes, *Rec. S. Aust. Mus.* **14:** 499–514.

Kondala stones *in situ* at Makurapiti. Giant standing blocks, portable stone and wooden musical sticks; standing stones struck with hammerstones and sounds are voices of the ancestors during rituals; may denote families of ancestral beings, be given names, and painted or covered with blood during ceremonies.

Tindale, N. B. and H. A. Lindsay

1963 *Aboriginal Australians*, Jacaranda Press, Brisbane. 139 pp.

Chapters on Ice Ages, Negritos, Murrayians, Carpentarians, economic life, art and literature, social organization, religion and their future; asserts that Tartangan culture was carried by Negritos, Pirrian by Murrayians, and allies many culture traits definitively with above peoples and cultures.

Tudehope, C. M.

1963 A native waterhole in the Black Range, *Vict. Nat.* **80**, 261.

Wingert, P.

1962 *Primitive Art: its styles and traditions*, Oxford Univ. Press.⌐Brief review of Australian aboriginal art, pp. 263–9.

Topical Reports

1. Trans-Pacific Contacts

GORDON F. EKHOLM

Received 7 May 1964

The list of publications given below reflects the broad nature of the topic of Trans-Pacific contacts; the problems of Polynesian origins and navigational skills; the distributions of cultivated and other plants and the theoretical background of diffusion studies generally. The paper by Tolstoy is outstanding; with its rigorous scientific method in the study of diffusion it provides one of our best 'proofs' of Trans-Pacific contacts.

Bibliography

Carter, George F.

1963 Movement of people and ideas across the Pacific, in *Plants and the Migrations of Pacific Peoples*, pp. 7–22. A Symposium, held at the Tenth Pacific Science Congress, Hawaii, 1961. Jacques Barrau (ed.), Bishop Museum Press.

The distribution of certain cultivated plants and of weeds in the Pacific area show extensive and repeated contacts between Asia, the Pacific Islands, and America. This view is based on certain historically known instances of plant transfers that occurred only through long and repeated contacts.

Ekholm, Gordon F.

1964 Trans-Pacific contacts, in *Prehistoric Man in the New World*, pp. 489–510. Published for Rice University by the University of Chicago Press, edited by Jesse D. Jennings and Edward Norbeck.—Some of the theoretical problems involved in the investigation of the evidence for trans-Pacific contacts.

Estrada, Emilio and Clifford Evans

1963 Cultural development in Ecuador, in *Aboriginal Cultural Development in Latin America: An interpretative review*. Smithsonian Miscellaneous Collections, **146**(1): 77–88. Smithsonian Institution, Washington.

The archæologically known culture history of Ecuador is concisely summarized. The two authors visualize two cultural intrusions from Asia, one at about 2500 B.C. from the Jōmon culture of Japan and another at about 200 B.C. from a less well defined source in eastern Asia.

Ferdon, Edwin N. Jr

1963 Polynesian origins, *Science*, **141**(August 9): 499–505.

The problem of Polynesian origins and diffusion is shown to be far more complex than has been thought in the past. There exist several possible sources of origin, and, due to the character of ocean voyaging, a regular island-to-island diffusion pattern need not be expected.

Golson, Jack (editor)

1962 Polynesian navigation; A Symposium on Andrew Sharp's Theory of Accidental Voyages. Supplement to the *Journal of the Polynesian Society*, **71**(nos. 3, 4). Memoir **34**: 153 pp. Wellington.

Theories of trans-Pacific contacts depend in large part on other theories concerning the sailing and and navigational skills of early peoples. This symposium reviewed Andrew Sharp's thesis that the Pacific Islands were settled primarily through accidental or drift voyages. A long critique of Sharp's views by G. S. Parsonson (pp. 11–63) is especially cogent and valuable.

Heyerdahl, Thor

1963 Prehistoric voyages as agencies for Melanesian and South American plant and animal dispersal to Polynesia. In *Plants and the Migrations of Pacific Peoples*, pp. 23–25. A Symposium, held at the Tenth Pacific Science Congress, Hawaii, 1961. Jacques Barrau, (ed), Bishop Museum Press.

Several cultivated or useful plants of Easter Island, including the totora reed and the sweet potato, are thought to have been introduced from the Americas while other Polynesian plants have clearly been brought in by voyages from the west.

Li Hui-lin 李惠林

1961 Mu-Lan-P'i 木蘭皮: A case for pre-Columbian Transatlantic travel by Arab ships, *Harvard Journal of Asiatic Studies*, Harvard-Yenching Institute, 23(1960–1961): 114–126.

Two Sung geographical works refer to the land of the Arabs and to a strange country still farther to the west that is reached by a hundred days of sailing in large ships. It is suggested that this land might be best identified as South America.

Meggers, Betty J.

1963 Cultural development in Latin America: An Interpretative Overview, in *Aboriginal Cultural Development in Latin America: An Interpretative Review*. Smithsonian Miscellaneous Collections, **146**(1): 131–148. Smithsonian Institution, Washington.

The summary of an excellent symposium reviewing current knowledge of the archæology of Latin America. The great importance of diffusion between the several centres of New World cultures is emphasized, and various comments on the probability of trans-Pacific relationships are included.

Smith, C. Earle Jr. and MacNeish, Richard S.

1964 Antiquity of American Polyploid Cotton, *Science*, **143**(3607); 675–6. Washington.

Fragments of a single cotton boll are reported from Coxcatlan Cave at Tehuacan, Mexico, in levels dated at about 5800 B.C. This appears to invalidate the widely held theory that the Old World element of the hybrid American cotton was probably brought from Asia by man.

Swadesh, Morris

1964 Linguistic overview, in *Prehistoric Man in the New World*, pp. 527–556. Published for Rice University by the University of Chicago Press. Edited by Jesse D. Jennings and Edward Norbeck.

The principles involved in studying the relationship and origins of the American Indian languages are discussed and it is shown that remote relationships to Asiatic languages must exist. Linguistic borrowings that might be the result of trans-Pacific contacts are also considered.

Tolstoy, Paul

1963 Cultural parallels between Southeast Asia and Mesoamerica in the manufacture of bark cloth, *Transactions of the New York Academy of Sciences*, Ser. II, **25**(6): 646–662.

The methods being used in a world-wide study of bark-cloth manufacture still in progress are summarized. Notable similarities between the industries of Southeast Asia and Mesoamerica are highly indicative of historic relationship. The author thinks that the industry was introduced into Mesoamerica in the early part of the first millenium B.C.

Vokes, Emily H.

1963 A possible Hindu influence at Teotihuacan, *American Antiquity*, **29**(1): 94–95.

Some of the shells depicted on the façade of the Temple of Quetzalcoatl at Teotihuacan can be identified according to the author as the West Indian Chank, a shell closely related to the 'Sacred Chank' of India. This ceremonial use of the same kind of shell in the two areas may be significant.

2. Linguistics

MILTON E. BARKER

Received 4 May 1964

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1961 Word bases in Bilaan, *Lingua*, **10**(4).

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1962 *Indonesian Language and Literature: Two Essays*. (Cultural Report Series **11**: ii, 40 pp.) New Haven, Connecticut; Yale University Southeast Asia Studies.

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*Abbreviations**

BSLP	*Bulletin de la Société Linguistique de Paris.*
AL	*American Literature.*
BSOAS	*Bulletin of the School of Oriental and African Studies.*
IJAL	*International Journal of American Linguistics.*
OL	*Orbis Literarum.*

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* These occur only in this contribution and do not appear in the general list on p. xi.

3. Human Geography, 1963

OOI JIN-BEE

Notes on Research, etc.

A Centre for Southeast Asian Studies has been established at the University of Singapore. It is composed of those members of the departments of Economics, Geography, History, Law, Political Science and Social Studies who are actively doing research in the Malaysian and other regions of Southeast Asia.

The Joint Committee on Contemporary China of the Social Science Research Council and the American Council of Learned Societies sponsored a Planning Conference on the Geography of China. It was organized by the Association of American Geographers' Committee on Chinese Geographic Literature and held at the University of Chicago, on 11–14 July 1963.

A recent article (The development of geography in the People's Republic of China, *Geography*, April 1963: 139–54) by Professor Stanislaw Leszczycki, Head of the Geographical Institute of the University of Warsaw and Director of the Institute of Geography of the Polish Academy of Sciences, traces the growth of geography in China and the problems currently engaging the attention of Chinese geographers. The Institute of Geography of the Academy of Sciences in Peking is the main centre of geographic research. Nearly all the provinces of China have geography research centres which are fairly well equipped. These centres and the most important geographical publications in China are listed in appendices to the article.

A survey by the map curator of the American Geographical Society of the regional atlases of the world (Eva L. Yonge, Regional atlases, a summary survey, *Geographical Review*, July 1962: 407–32) reveals that, apart from the Soviet Union, the atlas coverage of the Far Eastern countries on the whole lags far behind the Western world. There are two good economic atlases of the Soviet Union, a regional reference atlas, an excellent atlas of agriculture, as well as four Soviet atlases of more restricted scope. Coverage for India and Taiwan is good; for Indonesia, Pakistan, Ceylon, Korea and the Philippines fair; and for the other countries of the Far East poor. No atlases are listed for China or Japan.

Among the more important research projects now being undertaken by geographers working on the Far East are: Urbanization and the Western impact in East Asia during the 17th to 19th centuries, by Rhoads Murphey; The changing industrial geography of Mainland China, by Chang Kuei-sheng; An atlas of contemporary China, by the University of Washington; The urban geography of Nagoya, Japan, by John D. Eyre; The geography of cities in India, by H. F. Hirt; and National resources and Industrial development in India, by C. H. MacFadden.

NEW FAR EASTERN PERIODICALS IN GEOGRAPHY

The first number of the *Deccan Geographer*, a semi-annual publication of the Hyderabad Geography Association, appeared in July 1962. Most of the articles will be on India, with emphasis on the northeast. The Chinese Academy of Sciences, Peking, is publishing a bi-monthly geography serial entitled *Dili (Geography)*. It is in Chinese; the first number appeared in 1961. The East Pakistan Geographical Society has started a monograph series. The first monograph is entitled *Land-use in Rampal Union: A Horticultural Area.*

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4. Book Reviews

Brothwell, D. and E. Higgs, (eds): *Science in Archæology; a comprehensive survey of progress and research.* New York, Basic Books Inc., 1963. 595 pages, 95 illustrations, 92 drawings, 66 tables. U.S.$17·50

The fifty-five authorities of this comprehensive survey of science in archæology write on a wide range of subjects, and provide a timely addition to the growing body of literature dealing with new scientific perspectives of archæology.

While the decline in influence of the classical era in archæology, with its emphasis on art objects, may be lamented by some, the new approaches to excavation, and to pre-excavation and post-excavation techniques, are exciting. They suggest ways of extracting new information while reassessing the existing material and data in the light of new scientific techniques. New answers to old questions are given by many of the contributors, many of whom specialize in research outside what would have been considered the normal field of archæology not so many years ago. This inter-disciplinary approach is refreshing and provides a salutary check to the archæologist who imagines he can work alone. For continuing progress in science, greater co-operation amongst all disciplines is required. Archæology is one field where inter-disciplinary co-operation can give dramatic and rewarding results.

The table of contents gives some idea of the book's depth. Eight papers are on dating, twenty-three on environment (including climate, soils, plants and animals), twelve on man, nine on artifacts, and two on prospecting. Under each heading there are separate chapters on aspects of the subject which merit close attention. In assessing the validity of all the papers by specialists in such widely diverse fields, all I can hope to do is to touch lightly upon some of them. The section on dating is of particular interest to those working in the Pacific and Asia, and one can expect greater emphasis on obsidian dating, archæomagnetism, and pottery dating by thermoluminescence, during the next decade. Roger C. Green has pioneered the study of obsidian dating in New Zealand and more will be attempted in the Pacific where obsidian forms an important part of the local archæological assemblages. In this section perhaps the most disappointing paper is 'Archæology and dating' by C. B. M. McBurney, which while serving as a brief introduction to the papers that follow has very little substance of its own.

The section on environment has many fine contributions to which it is difficult to do full justice. Elisabeth Schmid's 'Cave sediments and prehistory' will stimulate a spirit of enquiry. Although caves in glaciated regions and in the humid tropics seem to have little in common, the methodological approach to both is similar. The section on plants is another touching on pressure points; pollen analysis, wood and charcoal, dendrochronology, palæoethnobotany, all receive attention. Cecilia Western's 'Wood and charcoal in archæology' is a fresh and informative contribution, while the more familiar topic of dendrochronology receives sound and useful treatment from Bryant Bannister. With botanical material coming now from deeper deposits in Fiji, I found Hans Helbaek's paper a most delightful introduction into palæoethnobotany. These papers make an interesting trio to read but then the same could be said by any other reviewer for any other three papers in *Science in Archæology*.

And so it is with the section on animals too. It is encouraging to see Elliot Dawson, one of New Zealand's archæological fraternity, ranging over the published literature on a world-wide scale to remind us of the importance of 'Bird bones in archæology'. New Zealand, more than most other countries, has had its archæological studies securely linked to the work of the zoologist from the very earliest excavations carried out last century, in attempting to explain the presence of certain bones now known to be bird remains. This happy marriage of the two disciplines has resulted in a new generation who are zoologically centred and yet quite at home as excavators in their own right. It is to be hoped that this sort of duality will become more common in some of the other fields now associated with archæology. The final paper in this section, by M. L. Ryder, re-emphasizes some aspects of 'Remains of fishes and other aquatic animals'. It will be of interest to midden-diggers along continental and island shores.

Man comes under the microscope in the next section with a new look at the 'Biology of earlier human populations' by one of the editors, Don Brothwell. This sets the scene for several related questions dealing with sex-determination, estimation of age and mortality, stature, cremations, palæopathology, radiological examination, mummified and dried human tissues, hair, palæoserology and blood groups. It is difficult to select papers for mention for they all concern the reader and demand attention. But in the Pacific, Gejvall's work on cremations must surely stimulate interest in the related subject of charred bone in early sites and the practice of cannibalism. Garlick's paper 'Blood groups and prehistory' will be valuable to readers of *Asian Perspectives*, particularly two of his maps showing the distribution of genes *B* and *M* in the aboriginal populations of the world.

Artifacts have long been the supposed end of the archæologist's excavation. The emphasis has changed now to the extent that one no longer thinks of them solely from the point of view of art objects to be placed in museums and looked at through glass panels. With modern techniques in the laboratory there is often much that can be found out about their technology, and about conditions in the working life of the artifact and the period since it became part of an archæological deposit. This section then, is centred on laboratory procedures for various artifactual media—metal, pottery, glass, skin and fibres. From all of these researches the individual artifact becomes more meaningful. This makes the archæologist aware that it has now become possible for micro-analysts and conservators to interpret and treat much of the excavated material before the archæologist sits down to process his data.

The last section, on prospecting, brings the physicists into the picture to stress the part they play in locating sites by resistivity surveying and magnetic location. Although the archæologist R. J. C. Atkinson pioneered the archæological use of one of these methods it would appear that this is a field where advances will be made by the physicists rather than by archæologists, who can no longer hope to have the training or the facilities essential to the development of the methods.

In retrospect, I would say that the standard of writing in this book is surprisingly even, considering that editorial direction was deliberately liberal, although it can be said that a few papers seem too short and do not present enough data while others are in need of tighter control. The general level of address, however, is sufficiently high to satisfy most archæologists while not being too removed from the general reader with some background in the subject. It would be easy to overlook the non-archæologist who might be lost in the deluge of enthusiasm from these fifty-five contributors. The editors have done their job well.

Inevitably, there are some subjects not covered by the book and in the preface the editors state their case for limiting its scope. With some six hundred pages the treatise is bulky enough, but one may perhaps feel a little wistful that some topics could not appear in such fine company. Scientific techniques in certain field contexts come to mind, and I would have appreciated contributions from experts on cave paintings and their related problems of sequence, pigment analysis and specialized photography. Some discussion of the latest methods of treating archæological materials during excavation would have been valuable. In this book, however, the excavator's immediate problems are subordinated to wider ones needing a specialist for their solution. This is as it should be, but in Southeast Asia and the Pacific, areas of high rainfall and temperature, the archæologist is often working far from specialist advice and laboratory services. This is a case where science and archæology need to meet at the end of a trowel, not after several months, over thousands of miles of distance, and many degrees of difference in temperature. A companion volume centred around science in the field, covering the archæologist's particular problems and all the aspects that the editors had to omit in the book under review, would round off this very fine effort. No doubt this is mere wishful thinking and suggests ingratitude. It is not meant as such, but as a tribute to the way in which this book has sharpened my appreciation of the study of scientific problems in archæology.

We have to thank the editors for their distinguished part in producing this collection of essays, and in making available recent advances to all who claim to be archæologists. It is a pleasure to have all this information brought together: the task must have been no easy one for the editors. Both Don Brothwell and Eric Higgs, the publishers and the printers too, can look with satisfaction on a beautifully produced book. And I suspect that each of the contributors also feel a little bit more than pleased to see their name and efforts inside the covers of such a volume.

BRUCE PALMER
Fiji Museum, Suva

MEIGHAN, CLEMENT W.: *The Archæologist's Note Book.* San Fransisco, Chandler Publishing Company, 1961. 29 pages, printed forms. U.S.$4·50

The use of standardized printed forms for the recording of archæological evidence in the field is now a common technique. Printed forms are of considerable value in the field but the fact remains that both cultural area and personal preference have such a profound influence upon the nature of these forms that it seems hardly possible that any two people would use anything like the same forms to do similar jobs. There is, however, a surprising degree of agreement between many printed forms for archæological recording as far as the essential minimum of information is concerned. The *Archæologist's Note Book* illustrates examples of forms used and developed by Meighan, including forms for recording the archæological site, individual excavated features, burials, petroglyphs, stratigraphy, photographs taken, artifacts, and for keeping the daily field records. The *Note Book* provides a number of blank examples of each of these forms intending that they be used in the field, while a brief explanatory section of some 25 pages introduces the forms. The first example of each form has been completed 'in the field' to further illustrate their use.

Since it is almost inevitable that each worker will wish to devise his own forms for field use, tailored to fit his own requirements, it is unfortunate that the publishers could not have reduced the volume to just the introductory section and a single completed example of each form. This would have reduced the cost and increased the value of the *Note Book* to workers outside California. Blank forms, as is now the case, could then have been purchased from the publishers *if* required rather than the assumed *as* required.

HAMMOND, PHILIP C.: *Archæological Techniques for Amateurs.* Princeton, Van Nostrand, 1963. 329 pages, diagrams. U.S.$5·95

This little book attempts to outline basic techniques of stratigraphic excavation for the American archæologist. It is intended for amateurs and the brevity of its contents prevents inclusion of detail to the extent that it can serve only as an introduction to its subject. The latter half of the book contains information on organized archæological activity in the U.S.A. and Canada, which might be of value to amateur archæologists and the more civic minded of the private collectors in these countries.

NARR, KARL J.: *Urgeschichte der Kultur,* 1961. Stuttgart, Alfred Kröner Verlag, 1961. viii and 362 pages, 16 plates, 2 charts; no price.

This publication, in German, is primarily a summary of present (1961) knowledge of human culture and technology from its earliest manifestations in the archæological record (Australopithecinae) through the development of civilization in the Near East and Egypt, with emphasis on the latter. Not much attention is given to skeletal material. Urbanization, the beginnings of agriculture and the domestication of animals are covered in detail.

La Poterie Malgache. Catalogue de L'Exposition 'Poterie Malgache'—Opened 28 February 1964, presented by the Departement d'Art et Archéologie, Faculté des Lettres et Sciences Humaines de Madagascar, Tananarive, Imp. Société Malgache d'Edition (in French), 1964. 50 pages, 7 plates; no price.

La Poterie Malgache, while serving as a catalogue for an exhibit of the pottery of Madagascar, is more a summary of what is known of Madagascan pottery in preparation for the beginning of serious archæological research in this country. The exhibit included ancient, recent, and present day pottery, and the book concerns itself briefly with the same subject.

There are five sections written by different authors. The first (pp. 9–10), by J. Dez, shows the relationship between the vocabularies applied to pottery in Madagascar and Indonesia. The main article (pp. 11–24), by Pierre Vérin, covers the physical side of the pottery (including what little is known archæologically), a description of recent pottery manufacture, and a description of pottery made by different groups in Madagascar and present in the exhibit. The third article (pp. 25–29), by Ch. Ravoajanakary, is in Malgache, and is followed (pp. 30–32) by a résumé of local proverbs involving pottery, by the same author. The final section (pp. 33–50), by N. Boulfroy and P. Vérin, is the catalogue of the exhibit.

The archæological material illustrated (final three plates) does not bear specific resemblance to pottery from sites in Southeast Asia but it does show a general resemblance to some of the pottery associated with iron in Indonesia. The present day pottery shown in the first three plates is generally similar to Indonesian pottery, particularly the form of the three multiple-necked jars in the third plate. The double-necked jar in the lower right hand corner of the third plate shares several specific elements of form and decoration with two earthenware jars from South Sumatra (plate III*a* and *c* in Solheim II, Wilhelm G.; 'Sa-huỳnh Related Pottery in Southeast Asia', *AP*, 3[1961]: 177–188). The examples illustrated in the fourth plate do not resemble pottery of Southeast Asia, within my knowledge.

This is an interesting and a useful presentation of Malgache pottery as it is known today. Let us hope that in ten years' time this may serve as a preface to a broad and detailed work on the pottery of Madagascar.

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BARRAU, JACQUES, (ed.): *Plants and Migrations of Pacific Peoples.* Honolulu, Bishop Museum Press, 1963. 136 pages, illustrated. U.S.$4·00

The recent surge of interest in the peopling of the Pacific has highlighted anew the interesting relationships between man and plants in the Pacific islands. There is no longer room for reasonable doubt that man introduced a number of food plants into these islands and that he must have had a pronounced effect upon the existing vegetation of the islands he arrived in. Many uncertain aspects of these relationships, of considerable concern to archæologists, were discussed in a symposium of papers presented at the Tenth Pacific Science Congress in Honolulu (in 1961) and are now presented in this publication.

One particularly interesting aspect of the relationship between man and plants is that provided by the dispersal of cultivated plants and plants that are in some way useful to man, although not, in the strict sense of the term, cultivated. This has been highlighted in the writings of Thor Heyerdahl as he sought connections between the New World and the Pacific, particularly Easter Island. It has renewed interest with some extremely interesting results, some of which are included in this Symposium. In an introductory paper by George F. Carter, it is stated that the advantages offered by plants when studying cultural diffusion across an area like the Pacific Ocean, is that plants '. . . are not human inventions'. The implication here is that natural evolution is not likely to produce the same or closely similar plants in two widely separated places. Few anthropologists would give the same odds to independent invention in 'cultural evolution'. Thus plants can provide a more reliable indication of cultural diffusion than purely cultural materials, with of course certain reservations. Carter outlines these as: firstly, that the plant in question must be demonstrated to be clearly identical in all places it occurs; secondly, that some degree of contemporaneity must be shown; thirdly (and perhaps idealistically) the plants should have similar names and usages attached to it and even similar non-rational ideas; and finally that means of transference other than man (e.g. wind, bird or water dispersal) must be shown to be impossible or extremely unlikely. Only rarely can we say with any assurance that all, or even most, of these conditions have been met in tracing man's movement through the Pacific by examining the plants he is alleged to have carried with him.

In the third paper in the Symposium, Thor Heyerdahl does appear to meet these criteria for a number of the plants brought to Easter Island by its earlier colonizers. Although it remains difficult to establish clearly the last criterion put forward by Carter (viz. the demonstration that natural means of dispersal are improbable or unlikely) Heyerdahl would seem to have a conclusive case for the transference of several cultigens and other useful plants from South America to Easter Island, including the *totora* and *tavari* reeds, the *toromiro* tree, the sweet potato and the gourd. The latter two are undoubtedly of the greatest importance in Polynesian prehistory. Although D. E. Yen, in a later paper in the Symposium, describes the flowering and setting of fruit in the sweet potato plants he grew in New Zealand, he does not seem to think that this played an important role in the dispersal of the sweet potato, although he suggests it as a probable source of variation within the species. Yen's paper, as well as that of Ichizo Nishiyama, clearly point the way in which botanists can attack the problem of plant dispersal by human means. Both make valuable contributions to this problem.

Quite another line of approach is provided in J. E. Spencer's discussion of the movement of rice cultivation from mainland Southeast Asia into Indonesia, as well as in the following paper by Ichirō Yawata on the rice cultivation of the prehistoric Mariana islanders. Although the identification of the varieties of cultivated rice plays an important part in tracing their spread, of even greater importance is the tracing of the techniques of terrace cultivation, the acclimatization of the rice plant to variations in environment, and the relationship between the wet and dry forms of rice cultivation. Spencer tentatively suggests that the main developments in rice cultivation took place in ' . . . upper mainland Southeast Asia . . .' and from there were carried down into the islands of Indonesia, where survival of the system was sporadic because of the environmental requirements of the plant itself. The spread of rice cultivation from these isolated centres to others may have required a reversion to the less demanding dry rice. The prominence accorded the wet rice form of cultivation throughout Southeast Asia and Indonesia may be largely the result of more recent historic factors.

Amongst the other valuable contributions in the Symposium, that of R. G. Robbins is of special interest. Robbins has previously suggested an anthropogenic origin for some of the grasslands of New Guinea. He develops this idea as a means of tracing the movement of peoples into the highlands of New Guinea. He begins by examining the succession of regrowth on abandoned land in the cycle of shifting cultivation. From this Robbins suggests a series of vegetation changes which '. . . follow each other in chronological order, . . . (and) can be interpreted as giving a relative, though not absolute, measure of man's depredations in any part of the Highlands' (p. 52). The anthropogenic origin of grasslands has been suggested for New Zealand and parts of Southeast Asia, so Robbins's discussion has a wide application. It could prove a really valuable means of tracing the movement of people over comparatively small areas where little cultural diversity or change is available to the archæologist.

Several papers in the Symposium (by A. G. Haudricourt, Ann Chowning, Benjamin C. Stone, and Harold C. Conklin) examine linguistic evidence in an effort to trace origin, dispersal or other aspects of the symposium topic.

Indeed the symposium includes a variety of interests centring around the relationship between man and plants. By sharing this common interest, a number of different approaches combine to make a readable and valuable collection of papers. This, and the usual high standard of publication maintained by the Bishop Museum Press, make for a really excellent contribution to the growing literature of ethnobotany.

COLIN D. SMART
University of Hawaii, Honolulu

BARRAU, JACQUES: *Subsistence Agriculture in Melanesia.* Honolulu, Bernice P. Bishop Museum Bulletin **219**. 1958. 111 pages, 34 figures. U.S.$3·50

BARRAU, JACQUES: *Subsistence Agriculture in Polynesia and Micronesia.* Honolulu, Bernice P. Bishop Museum Bulletin **223**. 1961. 94 pages, 23 figures, $3·00

These two volumes provide an extremely valuable reference source on subsistence agriculture throughout the Pacific (including New Guinea). They arose as reports of a project undertaken by Barrau for the South Pacific Commission to assess the subsistence food resources and survey the agricultural methods used in food production. The reports are based on a wide range of documentary evidence (bibliographies are included) as well as on considerable field observation. They provide an inventory of food plants used as well as the techniques of their utilization throughout the Pacific Islands.

WAGNER, FRITS A. and ANN E. KEEP: *Indonesia: The Art of an Island Group.* Art of the World, II. London, Methuen. 1959. 263 pages, chronological table, bibliography, index, 63 plates, 32 figures, 6 maps. 45s.

To cover 'all the important artistic achievements of mankind in Indonesia', and fit it into a synthesis of Indonesian culture history, is no easy job within the limits of a short volume. The author begins with 'The Neolithic Age', summarizing its whole culture from technology to its 'outlook on life'. He proceeds through the

'Megalithic Culture' and the 'Dong-son Culture' down to the cultural achievements of modern Indonesia. All forms of artistic expression are indeed treated, from bead work to *wayang* and beyond to modern Indonesian literature and painting, without, as the author claims, 'undue attention . . . given to any one particular aspect of art'. Moreover, the author feels it essential that the variety of art be shown as a function of the social and cultural facts and their history, and he thus weaves his art analysis upon the warp of four thousand years of Indonesian society and culture.

This grand conception cannot be compressed within the space allowed by the publisher of the series. The author's treatment of the art forms proper necessarily suffers from abridgement. At every turn, we are left short of any penetrating comment on the iconology of the motifs and compositions cited, even though the author clearly controls much of this knowledge and refers the reader to useful sources (many admittedly in Dutch). Unhappily, the author does not have an equally sophisticated grasp of the social and cultural processes within which he rightly sees these art forms embedded. His historical and ethnological interpretations are consistently uncritical and naïve. The character of the early Southeast Asian 'neolithic' is taken for granted when in fact its very definition presents serious archæological problems. His matter-of-fact statement on the political relations between the various early kingdoms of Java and Sumatra is simplified to distortion. A seven-page summary of Indian culture lacks depth and authority.

But the work has valuable sections. The piece on weaving techniques and patterns is a compact and useful summary. His lengthy discussions of Javanese *tjandi* and of *wayang* are very sensitive, at times profound; and his treatment of the Javanese *kris* most helpful. His handling of modern Indonesian art is understanding and sympathetic, but in its brief scope must necessarily be little more than a chronicle of names.

If the text is thus somewhat disappointing, the selection and rendering of the plates tipped in are superb. Many of the items, photographed in colour from the collection of the Koninklijk Instituut voor de Tropen, are new to me and the photography makes them all seem fresh and lively. Several fine colour plates taken *in situ* have been added. Binding and printing match the plates and the price of the book makes it a good bargain.

ROBERT R. JAY
University of Hawaii

VLEKKE, BERNARD H. M.: *Nusantara; A History of Indonesia.* Chicago, Quadrangle Books, Inc., The Hague and Bandung, W. van Hoeve Ltd. 1960. 479 pages, 5 maps, index. U.S.$10, Fl. 22·50

This is a revised edition of the first edition which appeared in 1943. The first four chapters were rewritten with the assistance of Professor C. C. Berg of Leyden University. Only Chapter 1: The Dawn of Indonesian History (7–34) is of concern to us.

As the preface was written in July 1958, presumably the rewriting was completed some time before that. This would explain why van Heekeren's two books on

The Stone Age of Indonesia and *The Bronze-Iron Age of Indonesia* were not used in the very brief summary of Indonesia's prehistory. It does not explain why Heine-Geldern's article on 'Prehistoric research in the Netherlands Indies', of 1945, was not used—in fact none of Heine-Geldern's works are referred to. The latest archæological reference to the prehistoric period is for 1935. In other words, this book has little worthwhile information on the prehistory of Indonesia. But as the subject of the book is history, this does not reflect on the rest of it.

W. G. S.

HALL, D. G. E.: *A History of South-East Asia*, London, Macmillan & Co, Ltd, New York, St Martin's Press. 1964 (2nd edition). 955 pages, 43 illustrations, 11 maps, index. U.S.$12·00

Hall, who is an historian, gives very little space to prehistory, and what he does give (2–10), is not valuable. He uses the term 'history' in a strict sense as shown when he says 'The Philippines, however, do not come clearly into South-East Asian history until their conquest by Spain late in the sixteenth century.' (3) The Philippines are left out completely until the arrival of the Spanish, in spite of their close cultural connections with the neighbouring areas of Southeast Asia and their trade connections with China and Southeast Asia, the Sung dynasty of China, and probably earlier. Protohistoric accounts of areas in the Philippines previous to the arrival of Magellan are not considered.

In reviewing the ten pages (with one minor exception covered below) concerned with prehistory, I shall do so virtually page by page. The map on page 2 is of value for locating a few of the important prehistoric sites and for indicating the main Pleistocene land-bridges between Asia and insular Southeast Asia. It is going too far, however, to label it 'Prehistory of Eastern Asia' as it includes few of the important sites. The majority of the sites shown on the map are not even mentioned in the text.

The first chapter, 'The Peopling of South-East Asia' uses two-and-a-half of its nine pages to indicate what Hall means by Southeast Asia and to explain that the area is important in its own right and should not be considered as just a shadow of India and/or China.

The author runs into difficulties as soon as he writes on the prehistory of the area. He says (6) that if the mongoloid peoples were derived from Pithecanthropoids and that if there is a clear line from *Pithecanthropus erectus* to *Homo australicus* then '*(a)* the mongoloid features that are so widespread today over our area were not, as was once thought, introduced for the first time by neolithic or Bronze-Age immigrants. . . . and *(c)* the theory that the mesolithic Veddoid peoples were the original inhabitants of South-East Asia is exploded'. Regardless of the probable ancestry of the Mongoloids in the Pithecanthropoids (this applies also for the Caucasoids), the skeletal material found occasionally with Hoabinhian-Bacsonian artifacts is definitely not Mongoloid in nature. It is still accepted that the mongoloid strains came into Southeast Asia with the Neolithic. What this has to do with exploding a theory that 'mesolithic Veddoid' peoples were the original inhabitants of Southeast Asia I do not see.

On the 'Hoabinhian-Bacsonian', the author first calls it 'Bacsono-Hobbinhian', then says that an Australoid-Veddoid type of human remains are associated with it. The human remains have often been called Palæomelanesian or Australomelanesian, but this is still controversial. It is true that pottery has been found with the Hoabinhian-Bacsonian remains but the proper association of this pottery is not known. These statements given without footnotes are out of date.

In his next paragraph, Hall repeats Heine-Geldern's association of the oval-axe culture with the use of the plank-built canoe. Heine-Geldern retracted this association in a note to the Editor of the *Journal of the Polynesian Society*, 67(2), 1958: 170–71; and further stated that the plank-built canoe is associated with people who used bronze tools.

There are other less important errors, but there is one, quoted from Coedès (9), where he says that before the impact of Indian culture the cultivation of irrigated rice fields was known. Archæologically, we have no indication of irrigation of rice fields until probably Funan times. Irrigation of terraced fields probably goes back to prehistoric times but not for rice—more likely for taro and possibly millet. Rice probably came to be grown in the terraced fields later.

In the beginning of his second chapter on proto-history (12–13), Hall very properly calls attention to the likelihood that the Southeast Asian peoples, who were first class sailors, were probably sailing to ports in India and Ceylon in prehistoric times, and somewhat later they probably sailed to India and Ceylon as much as sailors from there sailed to ports in Southeast Asia.

A quick look at Hall's select bibliography show that he has a little prehistoric archæological source material, and that only up to 1957, while his historical references are up to 1962. A reference to *Asian Perspectives* would have been helpful here.

As an extremely brief introduction to the prehistory of Southeast Asia for the historian this section is of some value. This in no way reflects on the rest of the book.

W. G. S.

Atlas of South-East Asia, with an Introduction by D. G. E. HALL. London, Macmillan & Co, Ltd, New York, St Martin's Press. 1964. 63 pages of maps, 42 plates, index. U.S.$10·00

The Atlas of South-East Asia is a companion volume to Hall's *A History of South-East Asia.* From the detail of the maps, the plates, and the rather simple level of the text, unlike the *History*, the *Atlas* gives the impression of being meant for a general lay audience. It is very useful to have an atlas for this area but for $10·00 I should personally have preferred more detailed and better balanced maps, leaving the text and pictures to Hall's *History.* I suspect the *Atlas* was meant to stand by itself, which it does—but not at the same level as the *History.*

In general the maps are good and the printing is clear. Relatively detailed coverage is shown for Indonesia and Malaya but the other areas are slighted and Malaysian Borneo (Sarawak and Sabah) and Brunei are left out completely. Summary maps of climate, vegetation, rainfall, land use, population, ethnology, etc., are useful but not specific enough to be of great value. The map on the inside front cover of 'South-East Asia in Prehistoric Times' is rather a joke for its almost complete lack of information.

The 'Introduction' (61–82) includes a short section on prehistory (64–67). While much briefer than the section in his *History*, Hall has fewer errors here. There are several inconsistencies. In the *Atlas*, he says that bronze-iron culture was introduced by 'Further immigrants of Malay type . . .' (65), while in the *History* he says 'There is no evidence in support of the theory that metal-culture was introduced by a new wave of immigrants. . . . A knowledge of metals was brought to elements of the coastal population through trading contracts with foreigners' (8). The latter statement is much more likely to be the truth.

WILHELM G. SOLHEIM II

Notes and Articles

I

Review of Mongolian Archæology

FRANK BESSAC

Kiselev, S. V., (ed.): *Mongolskii Arkheologicheskii Sbornik*, Moscow, Academy of Sciences of the U.S.S.R., Moscow. 1962.

This collection of articles on Mongolian archæology is published in honour of the fortieth anniversary of the Mongolian People's Republic. The compilation also commemorates, and is only made possible by, the emergence of Mongolian scholars into this area of research. Initially, the training of Mongolian archæologists and the leadership of excavations in Mongolia was under Soviet guidance, and is still so to some extent. However we note that the majority of the contributors are members of the Mongolian rather than the Soviet Academy of Science, and that half of the authors have Mongolian names.

Most of the work to which the articles refer has been done within the last ten and often five years. As this work proceeds, we look towards more publications of this nature. The articles are often of general interest to those concerned with Asian prehistory, and therefore I give a short summary of each, but recommend the reader to go to the originals. The reviews follow the order in which the articles are presented in the *Sbornik*.

Sěr-Odjiav., N.: Archæological investigations in the Mongolian People's Republic.

A general review of archæological work done within the Mongolian People's Republic, beginning with the discovery of the Orkhon inscriptions in 1889 down to the present. It is valuable for it presents a list of contemporary sources, all in Russian or Mongolian, concerning Mongolian archæology. One must read this introductory article to appreciate the progress made in the investigation of both the neolithic and the palæolithic in this region, since the other authors make only passing references to the Stone Age cultures of Mongolia.

Novgorodova, E.: Knives of the Karasuk Period from Mongolia and southern Siberia.

Description of Karasuk knives found in Mongolia and the determination of their distributions lead the author to discuss the origins of the Karasuk culture.

First she notes the presence in Mongolia of two types of bronze knives which are assigned to Karasuk times. One, the knife with a 'concave back' and often with a turned back end ('tail'), is found throughout the eastern steppe, that is from southern Siberia to the Ordos. Before the establishment of Karasuk culture these features hardly occur in southern Siberia, while they are repeatedly found at Anyang. The knives found in Mongolia resemble most closely those found in the Ordos and Inner Mongolia, although a style continuum exists between Siberia and the Ordos.

Such knives at Anyang are divided into three types:

1. S-shaped knives with a broad blade
2. The so-called ceremonial knives
3. Knives with dragon-like handles.

The ceremonial knife is the most ancient and it is thought that it was preceded by a knife of similar form for everyday use. Thus, the earliest site known for this knife style is Anyang. It is assumed that it spread across Mongolia to Transbalkalia and from there to the Yenisei.

The second type of bronze knife is that characterized by an arc-shaped back. This style occurs during our period from southern Siberia to North China; and, although the Mongolian instruments are closer in ornamentation, size, and type of handle butt to those of North China, the author presents no conclusive argument for the origin of these knives at Anyang.

A third type of knife is important to the discussion of the origins of Karasuk culture because of its total *absence* among the Mongolian finds. This is the elbow-shaped knife. Its prototype can be found in the sheathed knives from the Glaskovo and the Afanasievo interments. The elbow effect which characterizes the sheathed knives is produced by the insertion (at almost a right angle) of the blade into what was originally a bone handle. In the area of the Glaskovo culture this style can be traced back to the use of nephrite and flint as blades, although no elbow-shaped knives in their more fully developed form are known in Cisbaikalia.

The elbow knife is particular to the Karasuk culture and has been found in both early and late Karasuk interments. Its distribution corresponds to that of Feidorovo pottery, named after a site in the Minusinsk region. This pottery, associated with Karasuk interments, is very similar to that of the Afanasievo. Karasuk interment ceremony is also seen as a continuum of that of the Afanasievo. The author suggests, therefore, that the Feidorovo complex is evidence of a movement southward in early Andronovo times toward the mountains of Afanasievo tribes, which maintained (and evidently passed on) their traditions into the Karasuk period. The relation between the sheathed knives and the elbow knives is summed up thus: 'Evidently, the tribes which had retained Afanasievo traditions in making utensils and in burial rites were the first to have cast the bronze elbow knives in imitation of the Afanasievo sheathed knives' (p. 16).

This explanation for the origin of the elbow knife (and, it appears to me, the ethnogenesis of the Karasuk tribes) is preferable to other explanations, for instance, that it was derived from the Chinese elbow-knife money of the Chou dynasty. The earliest Chinese bronze money is round, and the earliest bronze knife money appears to have been made in imitation of the arc-shaped back blades of the Shang dynasty. Bronze elbow-shaped knife coins do not appear until the Spring and Autumn Period of the Chou (8th–5th centuries B.C.). They appeared approximately 500 years too late to have influenced the development of this knife style among the Karasuk.

The author then suggests that 'the Chinese knife money of an elbow form appears as the result already in Chou times of a return influence from southern Siberia to China' (p. 17). This fits well with the rising pressure from the steppe tribes upon

China which we associate with the beginning of the Spring and Autumn Period. However, the absence of elbow knives from both Mongolia and the Ordos argues against a Siberian origin for knife money and for a Chinese origin of the Siberian knives.

VOLKOV, V.: Bronze arrow-heads from the museums of the Mongolian People's Republic.

The author analyses altogether 25 Mongolian bronze arrow-head types. These are divided into three main categories:

1. Double-bladed socketed points
2. Tri-bladed and tri-faceted socketed points
3. Tanged points.

Most of the points of the first category appear to be related to corresponding Scythian types of about the 7th–5th centuries B.C. The Scythian prototype (an asymmetrical point with a diamond-shaped socket, on which is a small thorn-like projection) is absent in Mongolia; evidently then, Scythian and Mongolian developments are not exactly parallel, Scythian influence beginning in Mongolia between the second half of the 7th or 8th century B.C. The earliest Mongolian socketed arrow-points were probably copies of spear-points found to the east, especially in Siberia (cf. plate 3, no. 7) and it was here that Scythian influence had its effect.

Most of the tri-bladed and tri-faceted socketed points are similar to Scythian types of the 6th and 5th centuries B.C. However a special development among Mongolian arrow-heads is the appearance of a ring-like socket-butt, which seems related to the round holes which were originally cut into the sides of the blade, near its base, but later cast with the blade. The ring-like socket-butt and holes made it possible to secure the point more firmly to the shaft with small nails or wooden pins. They also occur on Hunnish iron 'whistling' arrow-points, one of which was found at the site of a Hunnish ruin. Thus, the bronze 'whistling' arrow of Mongolia is historically related to that of the Huns, not of the Scythians.

Later arrow-heads with bronze heads and iron tangs are similar in form to many of those mentioned above. Tanged arrows are rare among the Scythians, so their presence in Mongolia should be seen as a local development. The form of the head in general follows that of the socketed arrow-heads, but the tang itself was special to southern Siberia and especially Mongolia where about 50% of the arrow-heads have tangs. Iron-tanged bronze points are associated with the Huns because: *(a)* it is considered that iron came into frequent use in Mongolia during the third century B.C.; *(b)* such points are associated with ceramics attributed to the Huns; and *(c)* these points are similar to Hunnish iron points.

Both Tagar and Mongolian points of the Scythian period contain types which are significantly larger than the Scythian ones. Drawings, from the period under review, depict a short composite bow used for warfare and a long simple bow used for hunting. It seems likely that large points were used with the large simple bow while small points were used with the small composite bow. In other words, the author gives functional meanings for variations in the size and form of the bronze arrow-heads found in Mongolia.

CHLENOVA, N. L.: Concerning deer-stones from Mongolia and Siberia.

Deer-stones occur in connection with the flagstone graves of Mongolia and Siberia and are assigned to the general Scythian period. The drawings of the deers found on the stones are related to those seen in metal plaques in other areas of the Eurasian steppe. According to the little evidence we have, the deer-stones of Mongolia and Tanno Tuva are related to examples from eastern Soviet Kazakhistan, to those found within the Kirghiz Soviet Socialist Republic, and to metal plaques from the late Kuban culture of the northern Caucasus. The Mongolian style differs from the general Scythian deer style. Mongolian animals have a very long beak-like muzzle, flaring lips, two branches of horns in twisted perspective reaching back over the spine and placed one over the other; two forward horns grow over the forehead; they have an exceedingly long neck and front torso. Two disproportionately small, thin legs are placed very close to each other, and sometimes only the upper portion is depicted.

In order to understand the meaning of the deer-stones the author turns to a study of the distribution of the monumental stones of the time. Stone statues on the Black Sea steppes appear to depict warriors carrying weapons. The Mongolian deer-stones also often suggest a more or less vague human likeness. The stone is divided into three horizontal parts, and there may be war gear hanging from a 'sash' which cuts across the middle of the stone. The Scythian statues, as well as the Mongolian stones, seem to have been situated close to burials and may have served as tombstones. The author however is not certain that the Mongolian artists in all cases wished to render, even in a stylized manner, a figure of a man on these stones.

The deer on the Mongolian stones—they do not appear on Scythian stones—may be due to the Scythians. The author points out that the Scythians identified themselves with their word for deer, *saka*, and that the metal deer-plaques found among the Scythian bronzes probably was of totemic significance to some tribes. This became widespread and was carried by a migration of the Scythians to the east. The deer mark was preserved as an element of ethnic awareness, although warrior symbols and deer emblems naturally underwent change and finally appeared on stones which are at best only vaguely anthropomorphic. The author would like to test her hypothesis by comparing the skeletons in flagstone graves marked by deer-stones with those not marked by deer-stones. If the former prove to be more European in their physical type than the latter, then this would be a strong point in favour of her hypothesis.

I feel that this hypothesis must be approached with considerable caution. It is more economical to assume that the idea of a deer emblem spread from one steppe group to another without a population movement or a dominant warrior class. (I would consider style changes more likely to be associated with a migration of artisans.) Also, why must we assume an eastward movement for the deer-cult? The author seems to assume a tie-in of the deer-cult with elements of the Black Sea Scythian technology, these elements forming a non-functionally related complex held together either by migration or by the prestige of the donor society. Although such a non-functional connection is possible, the elements of the complex may have originated in different regions. This is more probable if the home of the Scythians were placed to the east, perhaps in eastern Kazakhistan. The method by which the author hopes to test her hypothesis seems bound to fail, unless she postulates the coexistence of two extreme population types which remained separate over generations, because of caste—not class—barriers. I do not think that such a form of social relationship is to be expected among Central Asian nomads. My remarks should not be seen as a negative criticism of the author's explanation for the meaning and origin of the Mongolian deer-stones. Her explanation has merit but it needs development, in view of other possible explanations.

DORJISURIN, TS.: Excavations of Hunnish graves in the Noin-Ula Mountains along the Khuni-Gol River (1954–1957).

This article describes many graves, and some sacrificial places in north-central Mongolia, that is, within Arakhangai and Central Aimaks. Emphasis is placed on graves believed to have belonged to the common people rather than to the Hunnish aristocracy. Common graves are comparatively small, round, and covered with a conical tumulus. In the majority of cases the deceased was laid on the level ground of the pit. The lower section of the pit was faced with unworked stones; more rarely an arched framework made of logs was constructed. Although the inventory of grave goods is meagre compared to those of the aristocratic Huns (in nearly all cases robbers have taken away the best of the grave goods), these excavations have yielded evidence which dates them from the first century B.C. to the first century A.D.

Although the descriptions of the size, shape, construction, orientation, etc., of the graves and sacrificial places are clear and detailed, it would be helpful if this writer and some others had included a few sketches.

DORDJI, D.: A History of the investigation of the stone drawings of Mongolia.

In addition to reviewing his subject, the author presents a stylistic and chronological classification of Mongolian two-dimensional representational art found on stones. The following four periods and styles relate to four different cultures:

1. A petrographic style related to the Karasuk culture (end of second millennium —beginning of first millennium B.C.) [cf. plate 12].
2. A petrographic style of the Scythian type (7th century B.C.—first century A.D.) [cf. the review of Chlenova's article, above].
3. Ancient Turkish petroglyphs (7th–8th centuries A.D.) [cf. plate 15].
4. Mongolian stone art, which is discussed in a separate article in the *Sbornik.*

The author points out that dating the various petroglyphs makes them more useful as sources for the study of Mongolian history. These classifications also have the greater value of raising questions about the relationships between the styles they represent. For example, the author sees the possibility of a historical relation between the Mongolian style of deer-stone of the Scythian period and style elements from the Karasuk (pp. 51–52).

PERLEE, KH.: Khitan cities and settlements on the territory of the Mongolian People's Republic.

This article is in part a general description of the Khitan cities in the northeast of the Mongolian People's Republic, that is along the valley of the Onon and Kerulen Rivers. Special attention is paid to those cities in whose excavation the author was personally involved. This material is extremely pertinent to our understanding of the nature of early Mongolian society and of the relations between the Liao dynasty and the steppe tribes. It appears to me that we have here archæological confirmation of Lattimore's position that the Mongol empire derived from steppe groups, on the edges of China proper, who were influenced by Chinese empire-building. Moreover, this early association between the Khitan and the Mongols also helps to explain the ease with which the Mongols established an administrative organization in North China.

A number of points presented here are worth notice:

1. The geographic and strategic position of the cities.
2. The presence of Buddhistic pagodas and shrines associated with at least one city.
3. The fact that, although these cities were for the main part support points for those nomadic pastoral groups which acted as tribal auxiliaries for the Khitan, they were also important centres for commerce, manufacturing, and agriculture.
4. The incorporation of Mongolian themes and style elements into the art work found within the cities.
5. The fact that the cities are at times found in pairs.
6. Evidence that large sections of the cities were available for occupation by nomads.

NAVAAN, D.: A hoard of iron objects from Karakorum. The hoard contained iron plough-shares, bushings for cart axles, bronze bells, spear-points, metal rods, and tub hoops.

KISELEV, S. V.: The 'escaped' stone tortoise of Karakorum.

A local legend tells of an imperial stone tortoise which supposedly escaped from Karakorum when the city fell. The author finds a stone tortoise miles from Karakorum on the slope of a hill littered with granite boulders. Observing that only the outline of the tortoise had been blocked out by the stonemason, he assumes that the stone was found on the spot and that it was there made ready for transportation to Karakorum. Presumably with the fall of the Yüan dynasty, the stone was left where it is.

OKLADNIKOV, A. P.: An ancient Mongolian portrait, writings, and pictures on rocks among the foothills of the Bogdo-Ula Mountains.

A rock painting was found in 1960 in the neighbourhood of Ulan-Bator. It consists of three principal parts; a woman dressed in medieval Mongolian costume, with *bogtay* (a cylindrical head-dress with a twig on top), a female maral, and two conventionally drawn figures of men. The painting is given a base line and is has

Mongolian and Chinese writing. The identity of the *bogtay* and other articles of wear is verified by reference to travel sources of the 12th and 13th centuries.

The painting is a religious composition. The author indicates the continuum through time of the deer motif and sees this particular maral as Olun-Hoa, the zoomorphic mythological founder of the Borjigin Obok. The conventional figures of men have their analogies among 19th century Buriat shamanistic drawings. Therefore it is most probable that the painting of the woman, who we know to be married from her dress, also represents a divine or semi-divine being. The point is driven home because the writing accompanying the composition is a eulogy to Heaven, the chief god of the Mongols of the time.

GRISHIN, IU. S.: Ancient monuments along the middle course of the Onon River.

A preliminary report of the many sites excavated in Southern Siberia along the banks of the Onon River, from the Mongolian frontier approximately to where the Onon makes its bend northward to the east of Chindant (near Khadabuluk). Also included is a reconnaissance report of the many flagstone graves found in the area.

Much of the material in the sites had been displaced by wind which had blown away any original protection offered by the dunes. This appears to have played havoc with site stratigraphy. Therefore, dating of the sites must be done by reference to analogous materials from other regions. Since stone implements seem to have changed little in form over long periods of time, dating and classification is dependent mainly upon ceramic analyses. Metal objects were not frequent, even in late Bronze Age and early Iron Age sites, but when found they helped to establish the affinities of the excavated material. Discussion of the relationships between objects found in the sites and analogous finds elsewhere included references to the Anyang, Yangshao, Karasuk, Glaskovo, Hun, and the late Siberian neolithic cultures. As the author says, 'So far we have succeeded in discovering all but palæolithic sites' (p. 110). The article is important for the student of Central Asian ceramics.

2

Stone Ring at Loh Ah Tsai, Lamma Island, Hong Kong

T. N. CHIU, C. L. SO, and S. M. BARD

Hong Kong University Archæology Team

The stone ring was found high on the west slope of the northwest part of Lamma Island about 100 metres above sea-level (Figs. 1 and 2), overlooking Hung Shing Yee. Current maps give no name for the spot itself; the villagers call the pass nearby Loh Ah Tsai 老鴉仔 (little old crow).

Mr K. M. A. Barnett, then District Commissioner for the New Territories, first noticed the ring in the autumn of 1956, and members of the Hong Kong University Archæology Team made several visits to examine it, the first in November 1959.

The ring is an artifact, comprising an oval of stones of varying sizes, with a slightly constricted waist, and at its widest parts measuring 9 feet by 14½ feet; its long axis points west-south-west (Pl. I *inset*); 28 stones form the circumference and 4 more divide it across the waist, obviously a part of the design. Three random stones in the upper part of the oval appear to have been displaced. The stones are rough unhewn natural boulders of coarse-grained granite. Though residual granite boulders are plentiful in the vicinity, there are relatively few of them in the area of the ring, for some 50 square yards. This would suggest that it was deliberately cleared. The ring is on a gentle slope, but above and below the slopes are steeper.

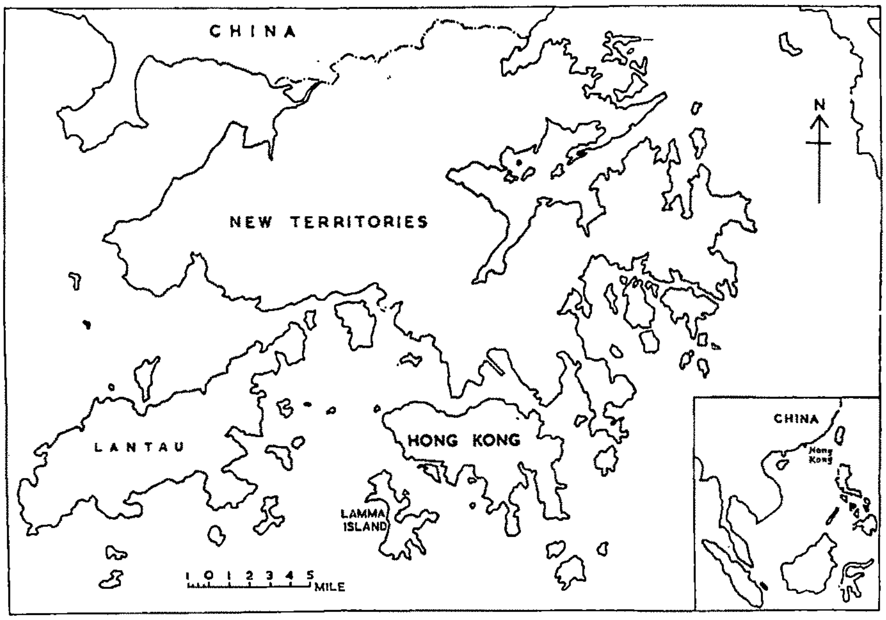
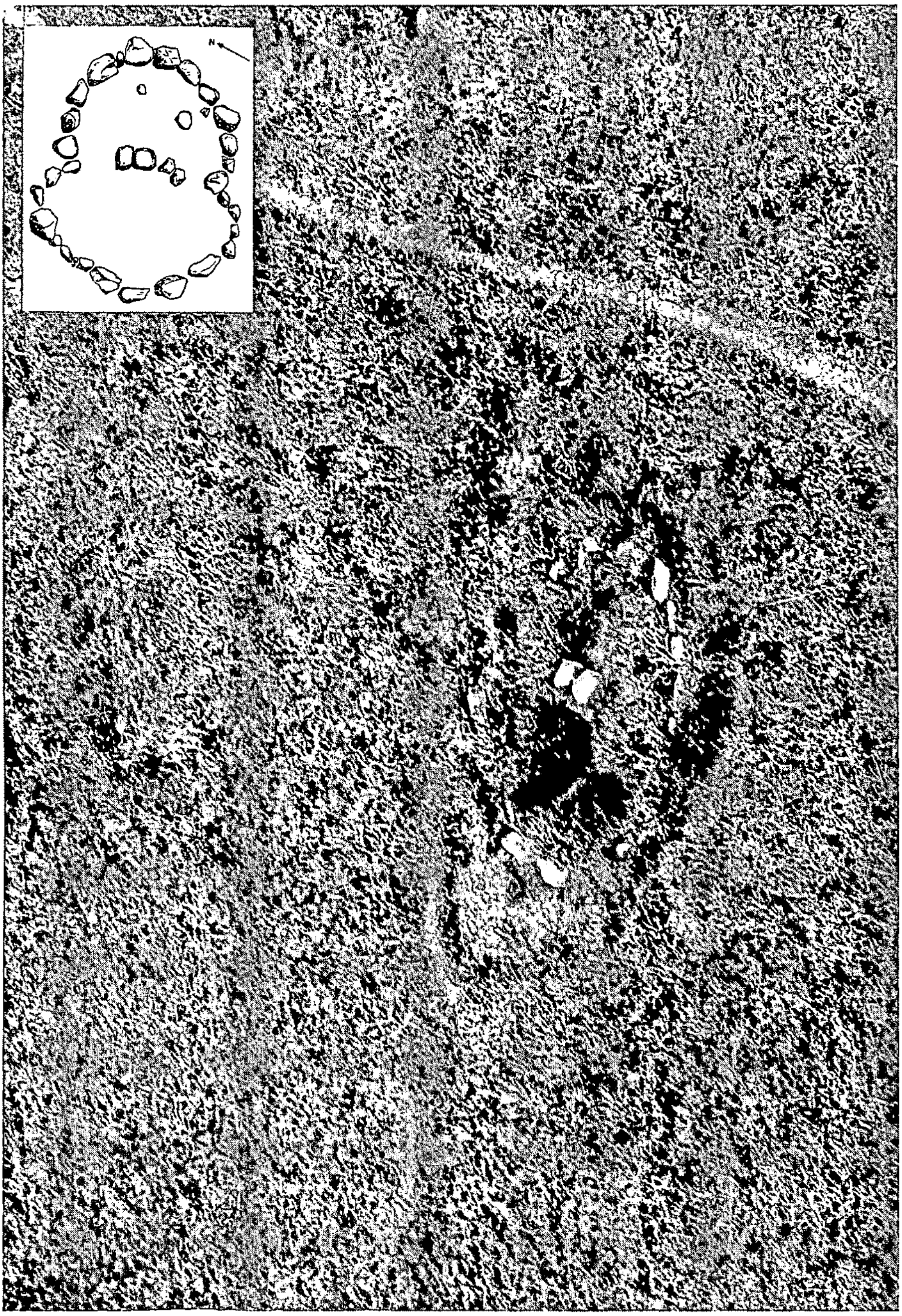


FIG. 1. Showing Lamma Island in the Hong Kong area



Photograph by Wing-Commander J. G. Bell, H.K.A.A.F.

Ring of stones on Lamma Island photographed from a helicopter.
Inset. Sketch of the ring.

Four stones are set outside the ring, in so regular a pattern that they appear to form a part of the whole design (only two appear in Pl. I); they lie in pairs: the first pair 15 feet from the lower end of the ring and 4 ft. 3 in. apart, precisely bracketing the long axis of the ring; the second a further 15 feet away from the first and 2 ft. 2 in. apart, again precisely bracketing the long axis of the ring. These measurements are significant. The distances of 15 feet and the almost exact ratio of the distances separating each pair (4 ft. 3 in. and 2 ft. 2 in.) show that the position of these paired stones is not accidental. Several other smaller stones lying near the ring have no clear relationship with the design, though there may have been an earlier outer ring.

The site is not a frequented spot. The nearest villages are Hung Shing Yee and Loh Ah Tsai on either side of the crest, near the sea below. The villagers walking to Sokku Wan take the footpath just above the ring (seen on Pl. I); none seem to have known of the existence of the ring.

Our first conjecture was that the ring was an a typical Chinese grave, but the trenches dug inside and outside the ring gave no evidence of burial, origin or date.

Another structure, possibly of similar purpose, exists at Taipo in the New Territories, many miles away. It is a smaller ring located in the garden of a private residence, and consists only of a few stones, one in the middle. The ground, however, was much disturbed, and many boulders were removed from the site when it was built on.

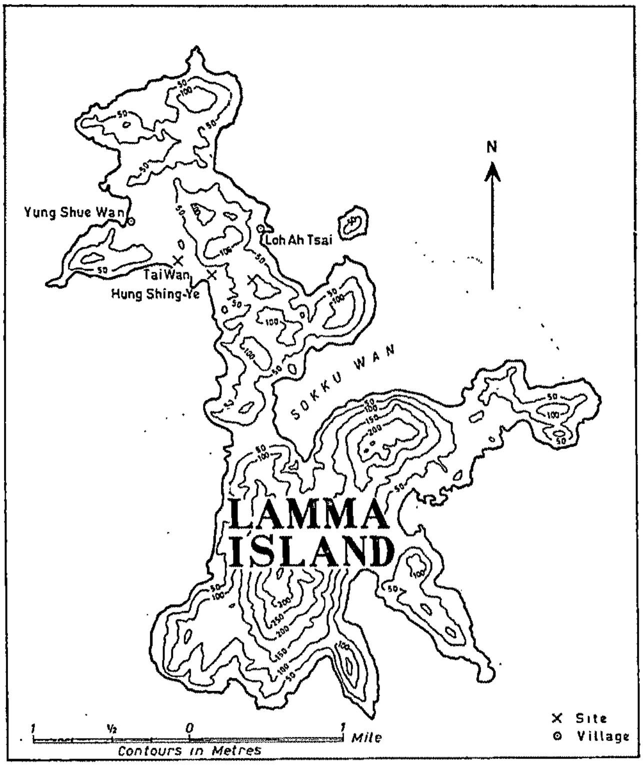


FIG. 2. Archæological sites on Lamma Island.

3

Acheulian Succession in Central India

R. V. JOSHI

The Central Indian region, comprising the Narmada and the Tapti river basins and parts of the drainage area of the Son and the Godavari, is unique in Stone Age sites (Fig. 1). It contains rich fossiliferous Pleistocene deposits in the Narmada Valley yielding Stone Age artifacts known for the last thirty years. In the recent explorations the present author (Joshi 1961*a*) discovered several Stone Age sites on the tributaries of the Ken (a major affluent of the Son River) in the Damoh area, which lies close to the northern bank of the Narmada River. The stratified, but unfossiliferous, gravel and clay beds of this region contained lithic implements of both the Early and Middle Stone Ages. The Early Stone Age industries are essentially Acheulian in character and further divisible into earlier and later stages.

The earlier industries occurred in the basal gravel, which is overlain by a sterile silt deposit, while the Middle Stone Age artifacts belonged to the sandy gravel resting on this silt. Due to the separation of these two tool-bearing gravels by a sterile deposit and differences in the use of raw materials and the tool types, no relationship could be established between the earlier and later Stone Age industries.

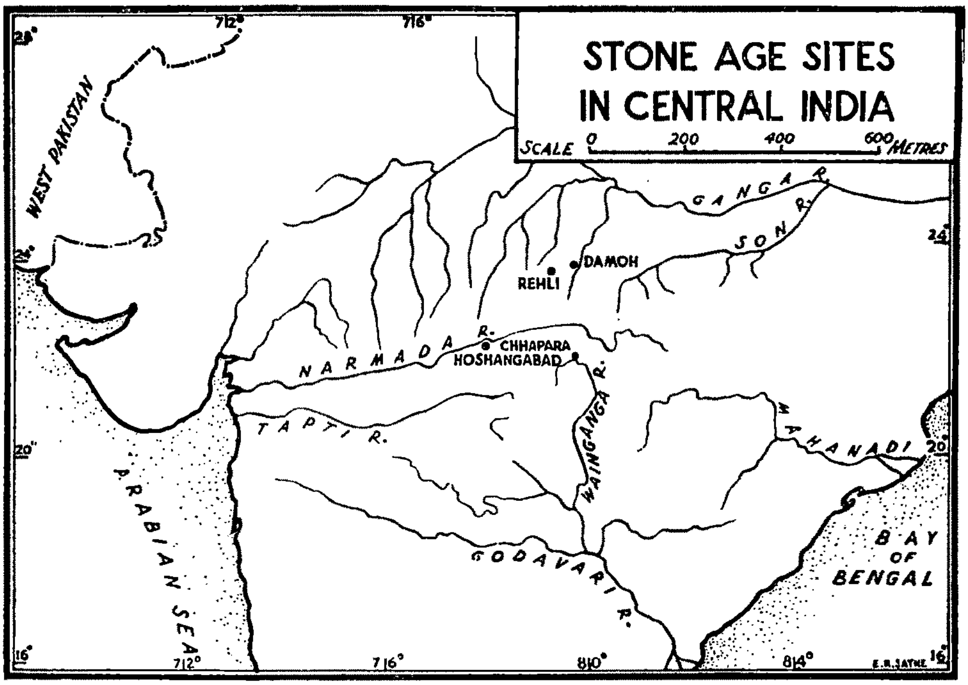


FIG. 1. Stone Age sites in Central India.

Another interesting area in Central India is the Wainganga Basin, a river which joins the Wardha, a northern tributary of the Godavari River. In the upper course of the Wainganga, the present author (Joshi 1961*b*) noticed two gravel-beds. Of these the basal gravel yielded an industry somewhat comparable to advanced Acheulian or *Wainganga-A type* (Fig. 2) while the second gravel gave an assemblage distinctly of Middle Stone Age or *Wainganga-B type* (Figs. 3*a* and 3*b*). Stratigraphically the Wainganga-A deposit is separated by a silt-bed from that containing Wainganga-B implements. However, in the raw materials, manufacturing technique and even in a few tool-types both these industries show a close relationship. Some of the tools, such as finely worked shouldered or tanged points, scrapers, burins and thick blades are the characteristic features of the Wainganga-B industry. In the advanced technique and new tool-types the Wainganga-B industry shows its evolution from Wainganga-A, an earlier industry with close late-Acheulian affinities.

In the Narmada river sections we have the early Acheulian stage which is represented in the Damoh area also. Although both these areas have deposits yielding late-Acheulian as well as post-Acheulian industries their interrelationship is not clear. The upper Wainganga Valley has not shown yet the presence of earlier Acheulian industries; but its beds possess a late-Acheulian Wainganga-A industry giving rise to a post-Acheulian or Middle Stone Age industry. The recent excavations on Adamgarh Hill close to the southern bank of the Narmada near Hoshangabad have further advanced our knowledge of Acheulian succession in Central India (*Indian Archæology*, 1962). In the stratified deposits of this palæolithic site are encountered implements ranging from early to late Acheulian and, finally, those of post-Acheulian industries. A short account of this excavation is given in the present paper.

The Narmada River at Hoshangabad (Long. 22° 45′ and Lat. 77° 43′) in Central India marks the boundary between two distinct morphological features. On the north of this river is the agglomeration of scraps and dissected tablelands of the Vindhyan Mountains. To the south is the 15-mile stretch of alluvial peneplain composed mostly of black cotton soil, interspersed here and there by isolated knobs and low stony ranges. Of these, an isolated low hill called Adamgarh, which lies 2 km. south of Hoshangabad, has long been known for its stone quarries. However, no artifacts of great antiquity were reported until the year 1935, when De Terra and Teilhard de Chardin visited the site in connection with their palæolithic studies of the Narmada River at Hoshangabad. From the three sites on this hill they recovered palæolithic tools from deep pockets filled with laterite soil, 40 to 50 feet below the hill surface on the eastern slope. De Terra (1939) distinguished two types in these soil pockets: 'One kind is filled with primary laterite which is free from implements; the other (tool-bearing) shows rewashed laterite in which angular pieces of iron oxide and laterite are mixed with quartz and sandy silt'.

Of the tool-bearing deposit he further writes, 'the presence of rewashed laterite with implements in Central India was hitherto unknown and is of interest in view of the wealth of early palæolithic hand-axe cultures represented in similar deposits near Madras. It indicates also that such ancient soils may be widely distributed in the adjoining hills, where fan deposits cover the flanks of the ancient alluvial plain'.

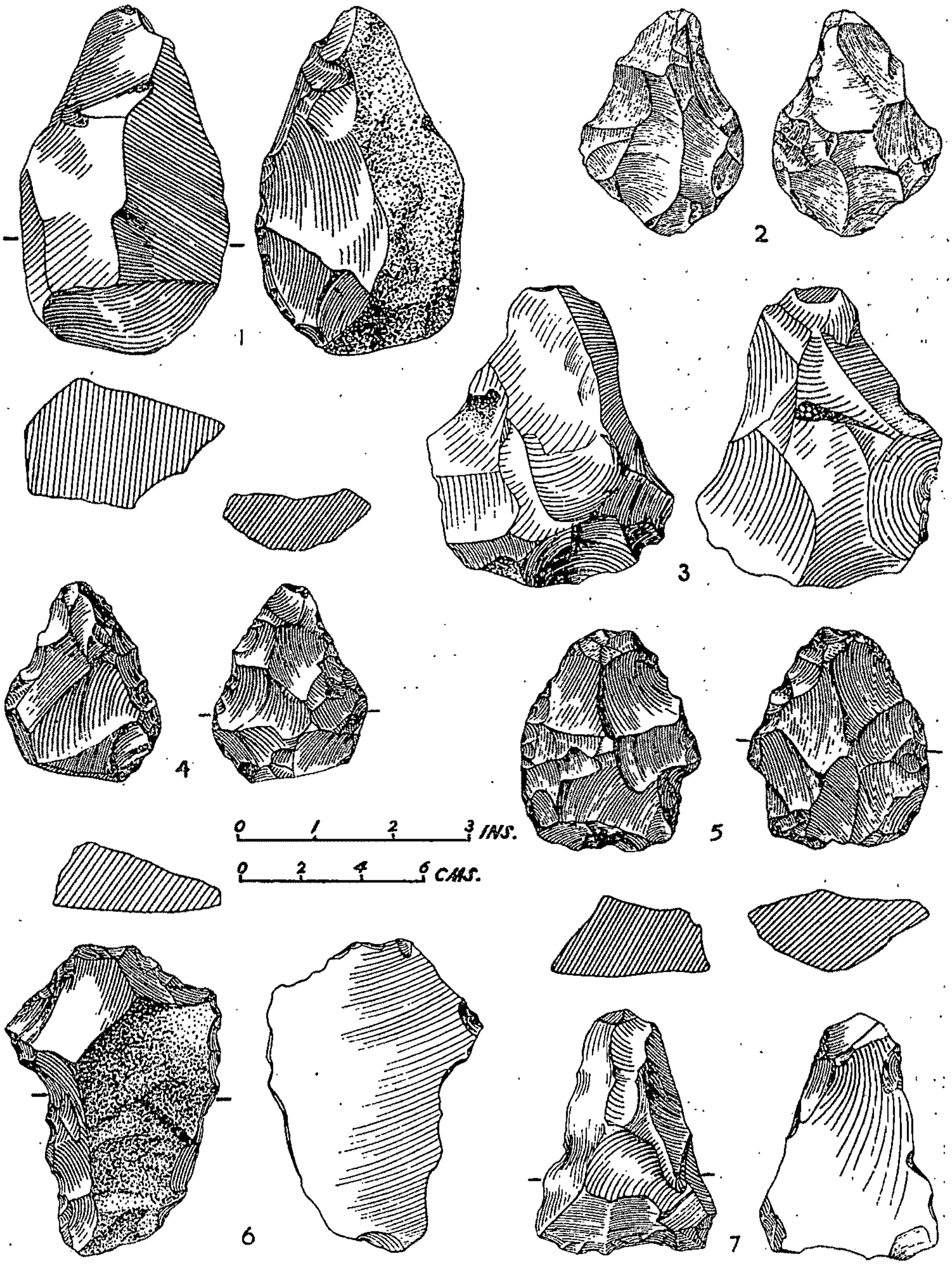


FIG. 2. Wainganga-A type tools.

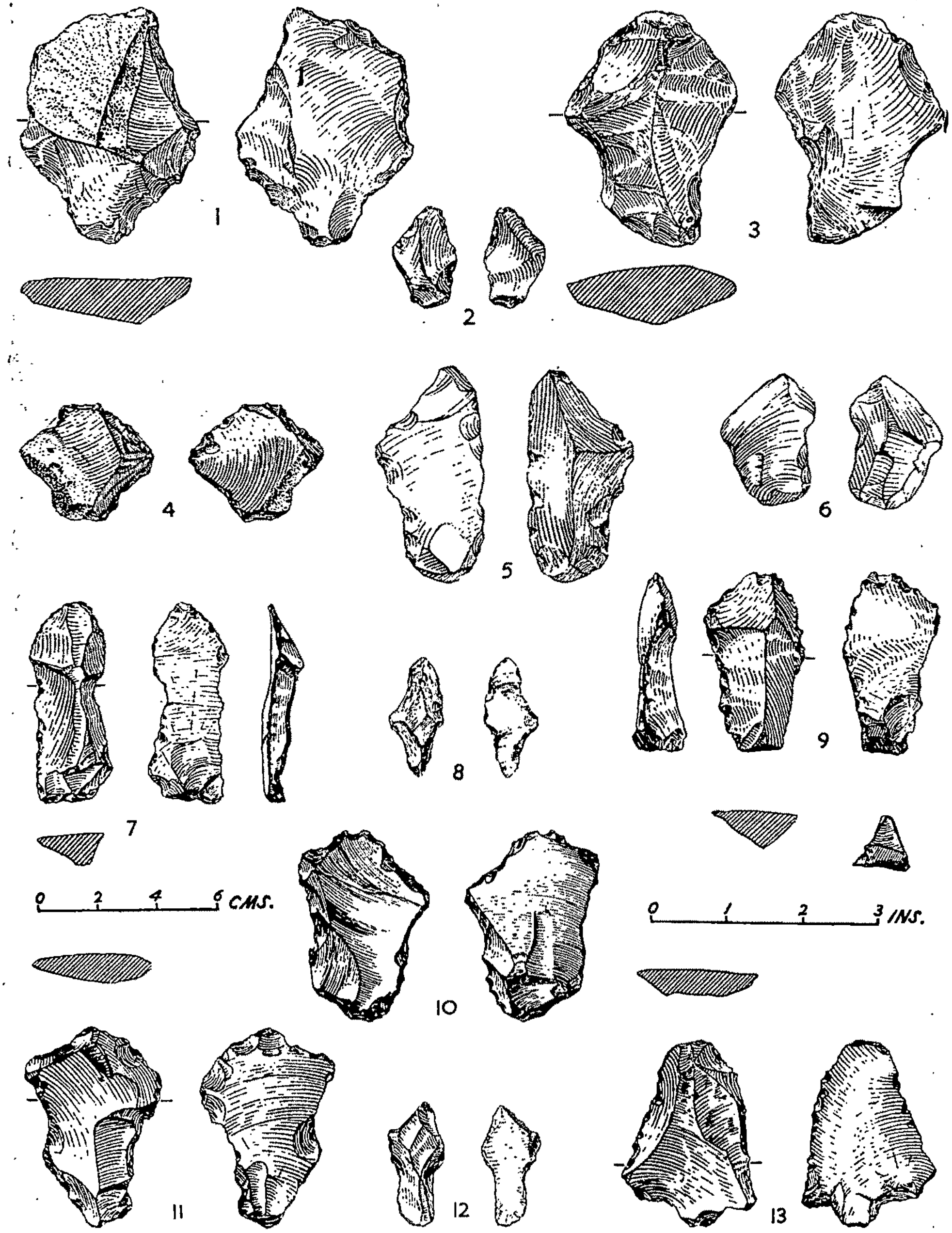


FIG. 3*a*. Wainganga-B type tools.

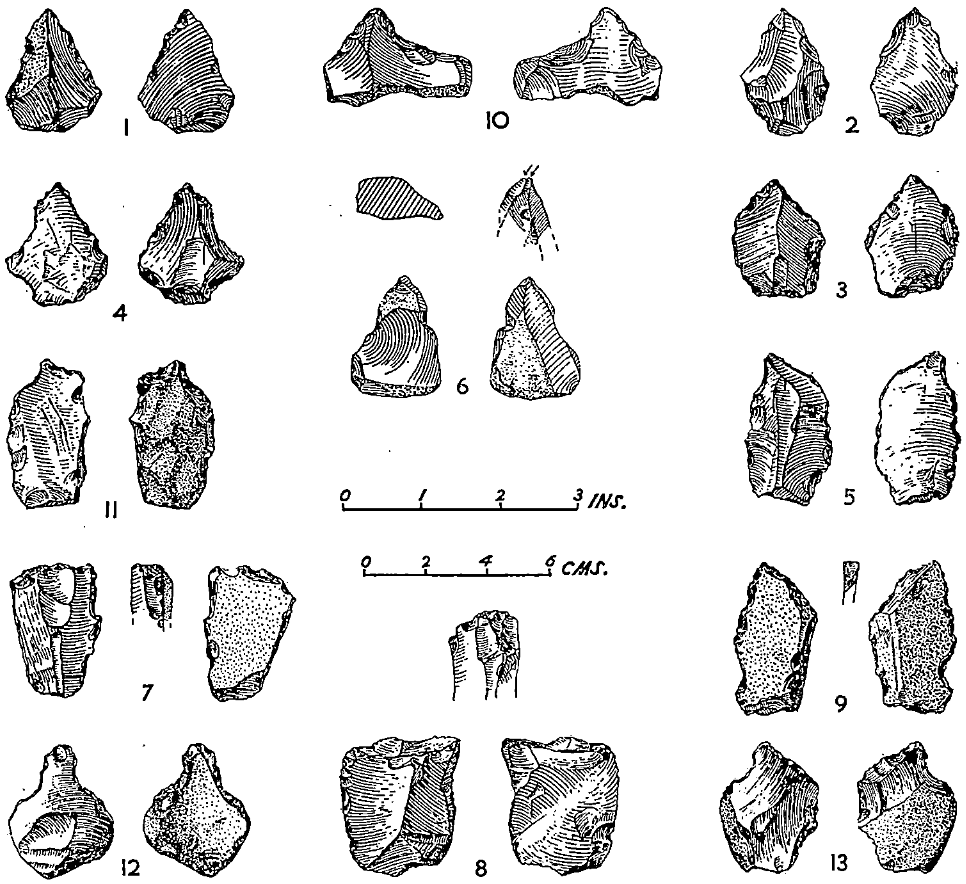


FIG. 3*b*. Wainganga-B type tools.

The tools collected by De Terra from rewashed laterite included 'a much rolled core or hand-axe of nondescript type and an assemblage of three crude Abbevillian-like hand-axes, one large flake with edge trimming, one chopper of early Soan type, and two large flakes. They came from a hollow two feet beneath the surface of ancient red soil on the hill-top, about 250 yards northeast of the rock shelter. . . . In the talus near the southern hill slope were found fine discoidal cores (one a primitive tortoise core), one flat-bottomed, steep-sided pointed tool and two pebble choppers, all of which resemble the early Soan types found in the lower Narmada group with early palæolithic hand-axes'.

The author examined this locality in December 1953 when a few tools were obtained from the debris adjacent to the rock-shelters. The tools were mostly hand-axes, cleavers, discoids and flakes, showing predominantly more or less Acheulian characters.

De Terra's survey of the Narmada between Hoshangabad and Narsingpur had already brought to light well-stratified fossiliferous Pleistocene beds containing human relics in the form of lithic implements. On comparative typology and stratigraphy de Terra equated these Narmada beds with those of the Potwar region of West Pakistan, which he had investigated earlier. Thus he established the relationship between the Stone Age cultures of two distant regions of the Indian subcontinent, namely the Indian Peninsula and the northern region.

Being situated on an isolated hill, the Adamgarh palæolithic site is free from direct river action. It is a promising locality for finding undisturbed evidence of Early Stone Age man.

In addition to palæolithic artifacts, Adamgarh Hill has yielded a rich microlithic assemblage from the black soil, and also rock paintings, which are rare in India. Although most of these paintings are quite late, a few of them seem to be of some antiquity. Whether any of them belonged to the microlithic period cannot be proved at the moment. Adamgarh Hill thus seems to have been a much frequented site from palæolithic to microlithic, and even in historic, periods.

In all, eighteen trenches, numbered ADG-1 to ADG-18, were laid out, some in the shelters and some close to them (Fig. 4). The lowest depth reached was about 3 metres in the cave-like shelter (Trench ADG-2). Below this is the laterite formation. ADG-2 has an interesting situation. It is a cave-like shelter, and the trenches were laid inside as well as outside. It showed the presence of laterite at the bottom overlain by sandy red clay and angular debris, the latter two yielding respectively Early and Middle Stone Age artifacts. Over these beds rests dark soil containing microliths. The top layers yielded a few objects of early historic times.

ADG-7 was inside the south-facing rock-shelter. It yielded Early Stone Age tools in the bottom rubble mixed with red clay, Middle Stone Age-type tools in the fragmentary deposit lying immediately above the basal red clay, and finally microliths

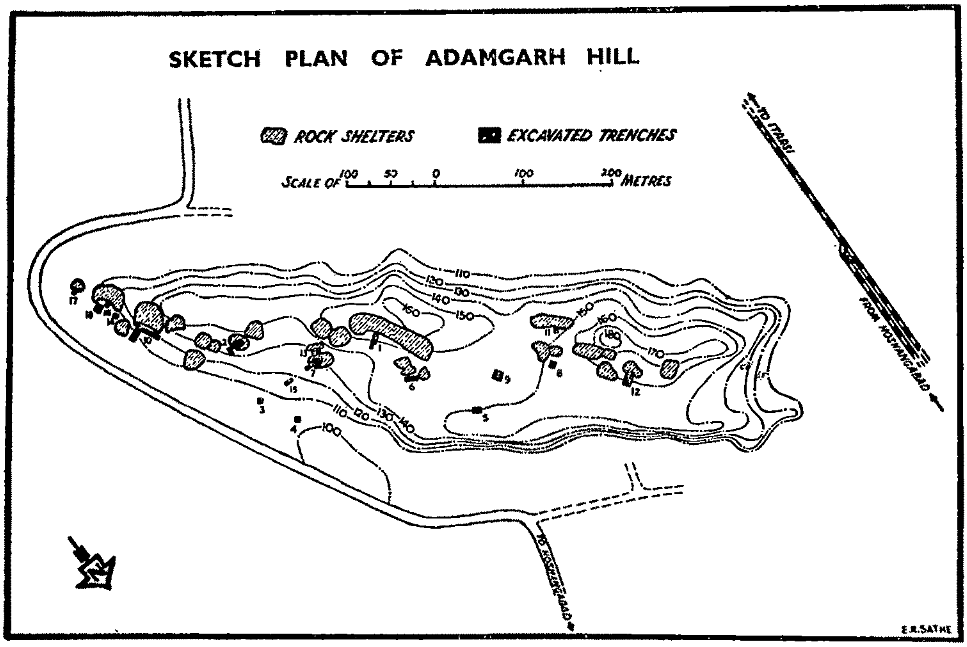


FIG. 4. Sketch plan of Adamgarh Hill showing rock shelters and excavated trenches.

in the surface deposit. In general, it may be said that the triangular area lying within the trenches ADG-1, 6 and 7 provided all the important stratigraphical and cultural data of this hill. A naturally exposed section on the northern slope showed the various stages of the formation of laterite on the local sandstone, its further derivatives of gravelly sand, clay and finally the debris layers.

STRATIGRAPHY

The hill is composed of bedded sandstones and quartzites of the Vindhyan system with insignificant partings of shale. The rocks have a westerly or southwesterly dip of about 10°–20°. The eastern or northeastern face of the hill is an escarpment. On this side the cliff rises steeply by nearly 25 metres from the ground up to level surface at the top of the hill. A subsidiary scarp of about 8 to 10 metres containing several rock shelters lies above this level surface.

The rocks exposed in the scarp show differential weathering. In these the sandstones and shales have been greatly affected by the weather, giving rise to pillar-like forms, honeycomb structures, and small arches, etc., characteristic of differential erosion. The quartzites, however, have resisted the erosion, and these beds often project wherever the underlying weaker sandstone and shale beds have been removed. A characteristic spheroidal weathering or exfoliation of the rocks due to thermal and chemical weathering can be vividly seen in several exposures. The boulder-like forms displayed by broken blocks on this hill and those found in excavations are due to this kind of exfoliation and are not a result of river action. The sub-rounded rock fragments occurring in the debris are likewise affected by the erosion.

On the northern slope of the hill the rocks are covered by a ferruginous laterite crust. In some places where the rock is heavily jointed this material has entered through the fractures. At one site huge boulders are found engulfed by the laterite. This has initiated further lateritization in the boulders, an outer crust of which is now completely weathered and has assumed a honeycomb structure characteristic of a true laterite. At the base of the escarpment a similar lateritization can be noticed

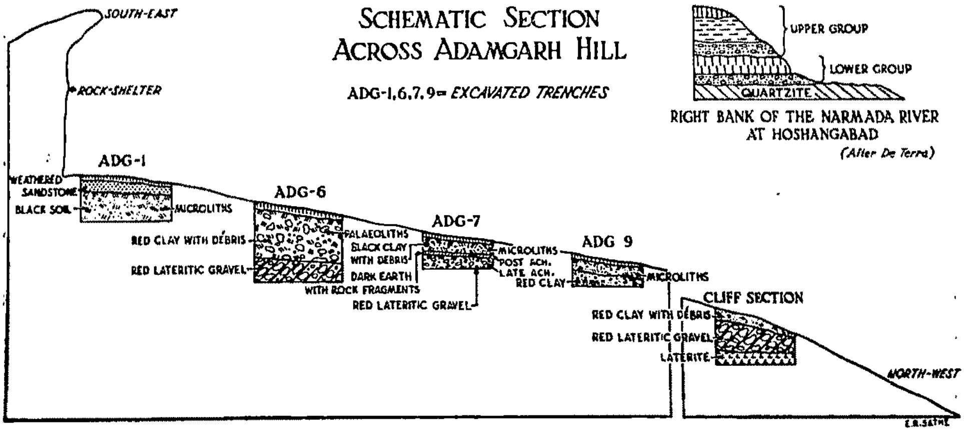


FIG. 5. Schematic section across Adamgarh Hill.

in the naturally exposed rocks, and it is also confirmed in the trial trenches (ADG-3 and 4).

On the high ground the laterite was noticed in the excavation at ADG-5, ADG-6 and ADG-8. It was also found in the trenches dug in the open rock-shelters, as at ADG-7, and the cave-like shelter at ADG-2. At all these places the laterite material rests on or is partly enclosed by the blocks of rocks broken off from the scarp face. The freshly exposed laterite had the appearance of typical laterite. It was red speckled with white, with a honeycomb structure, and was sticky when wet.

The laterite occurring in the depths on this hill thus lies on the underlying Vindhyan formations and is of a detrital nature. It must be derived from the laterite on the Deccan Trap or on the fan containing trap boulders somewhere in the upper course of the river. Its age, however, cannot be ascertained, except that it was formed some time before the appearance of palæolithic man on this site.

The laterite at Adamgarh has been partly eroded and covered by fine gravel and red clay derived from it. In the clay and overlying it is the unconsolidated debris composed of sub-rounded blocks and fragments of local rocks. This clay and the debris is the palæolith-bearing horizon. No second laterite deposit has been noticed sealing this palæolithic bed. Neither the debris nor the clay shows any kind of stratification imparted by water action. It is likely that the underlying laterite was severely eroded and fine clay and rock fragments deposited in the resulting hollows and depressions.

The tools embedded in the lateritic clays have been weathered and worn due to their association with these ferruginous clays and the action of the circulating subsoil water. For the same reason a few implements look worn. However, they are not rolled, thus proving that the tool-bearing deposit had not been disturbed. To summarize: the palæolithic stratigraphy at this site has a lateritic substratum overlain by a partly hardened sandy deposit and sticky red clay, the last two being derived from the underlying laterite (Fig. 5). Overlying and partly enclosed in the red clay and sandy deposit is the fragmentary talus or debris containing palæolithic implements. A section depicting this stratigraphy was exposed in the excavation at

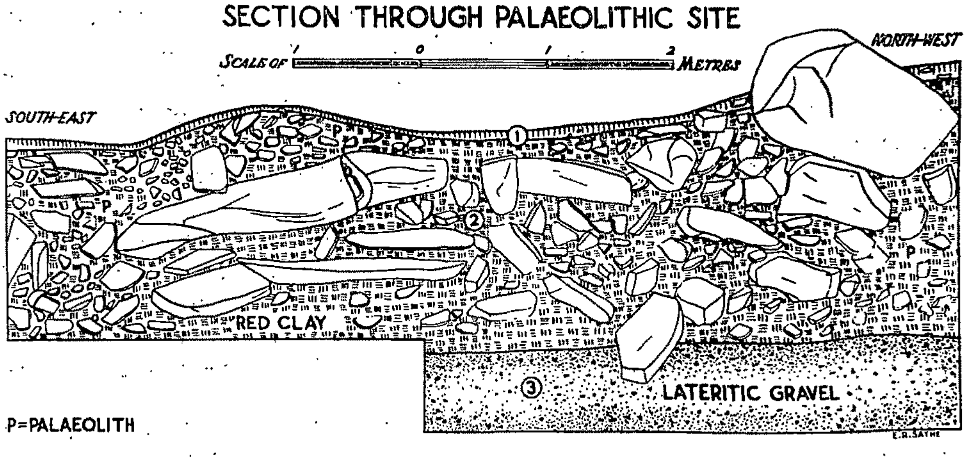


FIG. 6. Section through palæolithic site.

ADG-6 (Fig. 6). The surface soil resting on the implement-bearing bed is thin and composed of red silty clay, often dark in colour due to humus content. This yielded a few microliths.

Wherever the palæolithic tool-bearing talus is absent the red clay, which is often sandy, is extensively eroded. On the resulting uneven surface the microlith-bearing dark soils rest with a clear erosional unconformity as seen in trench ADG-8.

In Trench ADG-7, the palæolith-bearing debris is overlain by layers of rock fragments containing tools of smaller dimensions than those of the Early Stone Age. The tools are generally made of quartzite and rarely of chert, chalcedony or vein quartz. It is an assemblage of scrapers, points and flake-blades and is comparable to Middle Stone Age artifacts of this country.

THE ACHEULIAN INDUSTRIES

Nearly all the implements of the Early Stone Age are made on quartzite and fine-grained sandstones, locally available in the outcrops of the Vindhyan rocks on the hill. Only very rarely is chert or cherty quartzite used for this purpose. A large number of tools are made of blocks and chunks of rocks obtained either from the talus or directly from the well-jointed exposed rocks in the hill. The system of multi-directional joints facilitated mining of the rock fragments of tabular habit. A few of the steep-core scrapers and choppers are made of such tabular rock pieces.

Pebbles and pebble-flakes are also freely used in manufacturing artifacts. In the total assemblage of nearly 280 specimens, including cores and flakes, about 35% are made on pebbles or pebble-flakes. The rock formations of the hill do not contain conglomerate beds nor could pebbles have been deposited high up on the hill during extraordinary floods of the Narmada or the adjoining stream, for there is no evidence of flood action in the form of an appreciable pebble deposit nor marks of extensive erosion. As raw material for lithic tools the pebbles, therefore, seem to have been specially brought by man from the neighbouring river-bed. A good number of pebbles found in the excavation show battering or bruising, perhaps due to their use as stone-hammers or tools.

Pebbles have some advantages over the naturally exposed rocks. The former are readily available in the river in any desired size and shape and the tool-maker had simply to select a proper specimen of this raw material. Secondly, the freshly exposed river pebbles are usually less weathered and sufficiently tough to withstand drastic reducing in thickness and width as required to obtain sharp edges and points. On the other hand, the cloven blocks, being weathered, are generally weak and therefore less resistant.

Over 50% of the chopper tools are made from pebbles. Flattish discoidal pebbles were often used for making unifacially trimmed steep-edged scrapers, and ovoid or ellipsoidal pebbles for producing the chopper edge by alternate flaking on the circumference. In the excavated tools, the discoids form the major group after that of the choppers, and as with them, nearly half are made from pebbles. Hand-axes and cleavers are rarely made from pebbles.

The large number of unfinished tools shows that this was a palæolithic factory site. Hand-axes constitute 16·4% of the total collection. Out of these only 3·64%

INVENTORY OF IMPLEMENTS FROM ADAMGARH EXCAVATION TRENCHES—ADG-6 AND ADG-7

Industries		*Depth in cms.*	TOOL TYPES																*Total*	
			Hand-axes		*Cleavers*		*Scrapers*		*Points*		*Flakes*		*Choppers*		*Discoids*		*Cores*			
ADG-6	ADG-7		ADG-6	ADG-7	ADG-6	ADG-7	ADG-6	ADG-7	ADG-6	ADG-7	ADG-6	ADG-7	ADG-6	ADG-7	ADG-6	ADG-7	ADG-6	ADG-7	ADG-6	ADG-7
Post Acheulian	→ Microliths	0–20																		
		21–40																		
		41–60	1	—	2	—	3	—	1	—	2	1	2	1	4	2	1	—	16	4
Late Acheulian	Post Acheulian	61–80	—	—	—	—	—	2	—	1	—	1	—	2	—	1	—	—	—	7
	Late Acheulian——→	81–100	—	—	—	—	—	—	—	—	—	2	—	6	—	2	—	—	—	10
		101–120	1	—	—	—	—	3	1	2	8	2	3	3	3	2	—	—	16	12
		121–140	1	—	3	—	1	—	—	—	3	—	2	—	3	—	1	—	14	—
Early and Mid. Acheulian		141–160	4	—	3	—	—	—	2	—	8	—	13	1	2	—	—	—	32	1
		161–180	2	—	—	—	—	—	—	—	2	—	4	—	—	—	—	—	8	—
		Total (120)	9	—	8	—	4	5	4	3	23	6	24	13	12	7	2	—	86	34

are finished specimens. Five or six of the 18 cleavers are simple forms. There is also an appreciable number of unfinished choppers and discoids. Flakes, which make up 17·55% of the collection are, mostly un-retouched and are the waste product of tool manufacture.

The flake-scars on the tools are generally shallow and small, indicating controlled flaking by soft hammer. A large number of artifacts also show stepped scars of careful secondary trimming. The cross-sections of finished tools are more or less regular and the implements have symmetrical forms. All these features are typically Acheulian. Further, no technological distinction can be drawn between the tools made of pebbles and those dressed out of other material, since both are worked in the same way.

Trench ADG-6 yielded Early Stone Age tools in the debris layers overlying the lateritic clay, and a few implements of Middle Stone Age type in the upper levels. Nearly 86 out of 280 specimens were obtained from this trench.

The following pages give a detailed description of the material obtained from trenches ADG-6 and ADG-7 (see Table on p. 159).

The tools found at the lowest depth (180 centimetres) in ADG-6 are two incomplete ovates—one on a flake and another on a quartzite block—and four bifacial choppers. All are weathered and worn and show early Acheulian forms (Pl. I*a*). The richest tool-bearing horizon of 150 cm. contains most of the tool types in varying proportions. These implements are generally less weathered. In this level the finely flaked fresh ovates of lenticular cross-section occur along with the thick and worn ovates of irregular cross-sections. The cleavers are few and do not show much variety. Choppers form the largest group of thirteen specimens. Of these, four are unifacial choppers and all but one are worked from pebbles. The remaining nine choppers are bifacially trimmed—six of pebbles and three of blocks (Fig. 7). As pointed out on p. 158, the tool-makers have always shown preference for pebbles whenever the chopper was desired. The other tool-types—two points and eight flakes—are not very characteristic, although the former appears for the first time in this level.

The succeeding level of 135 centimetres shows a marked increase in number of cleavers of finer shapes and a decrease in number of hand-axes and choppers. No fresh hand-axe or cleaver occurs above 120 centimetres, and generally this marks the end of the Acheulian phase (Pl. I*b*). The implements from the higher horizons are small. Choppers from these levels are diminutive forms and they should rather be classified as core-scrapers.

In Trench ADG-7, hand-axes and cleavers are totally absent, other tools are smaller and types like points and scrapers are significantly present at all levels. However, the implements are still larger than those commonly met with in Indian Middle Stone Age assemblages. The accompanying chopper group has no special characteristics apart from small size.

A marked change in tool composition occurs at the 80-centimetre level and above. The implements of this horizon are small and represent an unspecialized industry of which points and scrapers are the chief tool-types. They are worked from flakes or nodules of quartzite and sandstone. Thick blades or flake-blades occasionally retouched as side-scrapers are conspicuous artifacts. They invariably

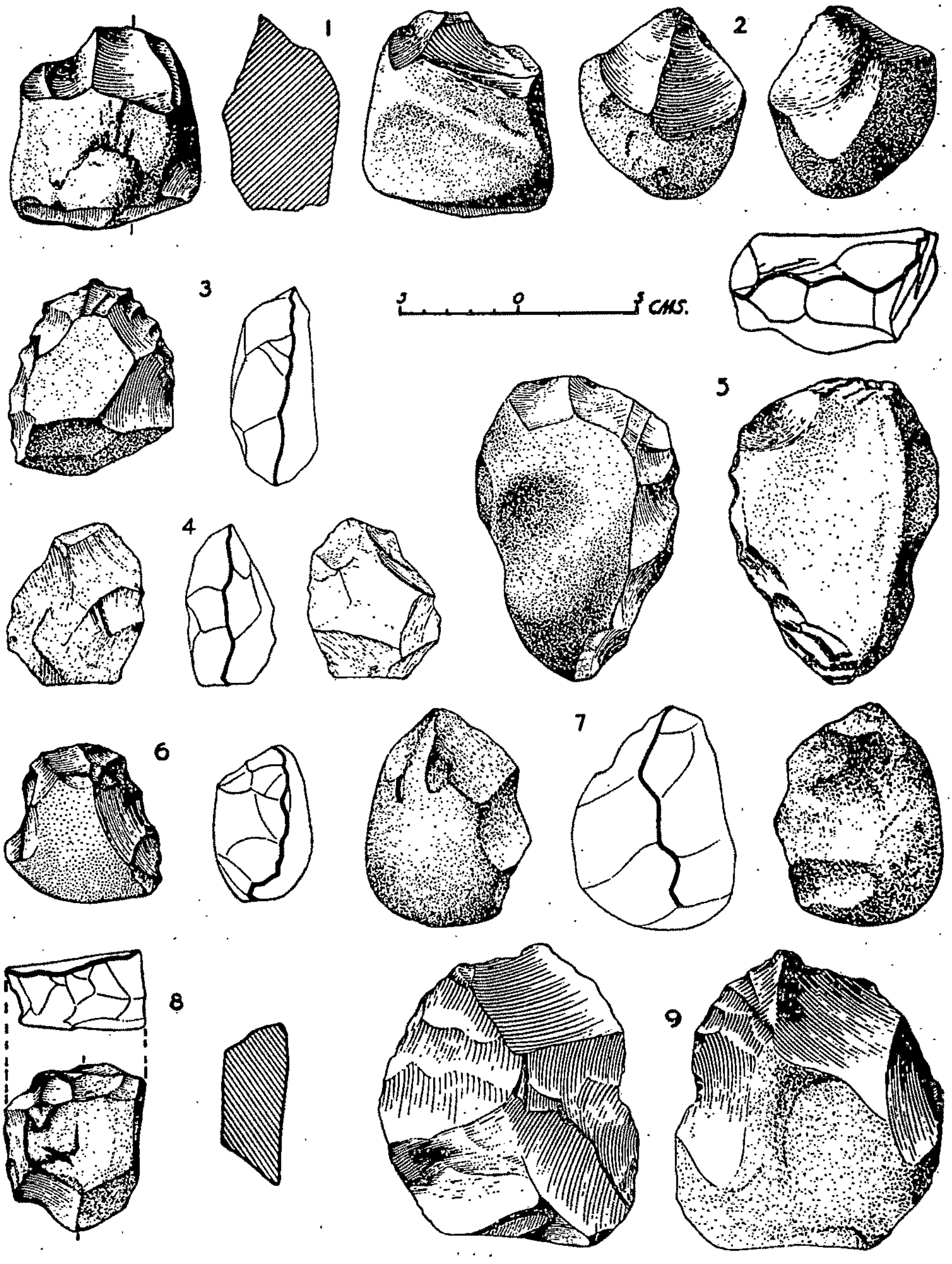


Fig. 7. Choppers from Adamgarh.

have an unfacetted striking platform inclined at an obtuse angle with the primary flake surface. Some with convergent primary flake-scars on the front seem to have been knocked off the prepared cores. The points are simple, leaf-shaped and sometimes even shouldered or tanged, while the scraper group is made up of core-scrapers and flake-scrapers, the latter including hollow-scrapers and side-scrapers. This group of tools represents the Middle Stone Age assemblage (Pl. II). The microliths appear at approximately 50–60 centimetres, and continue to the surface. However, their correlation with the Middle Stone Age industries cannot be established at this site.

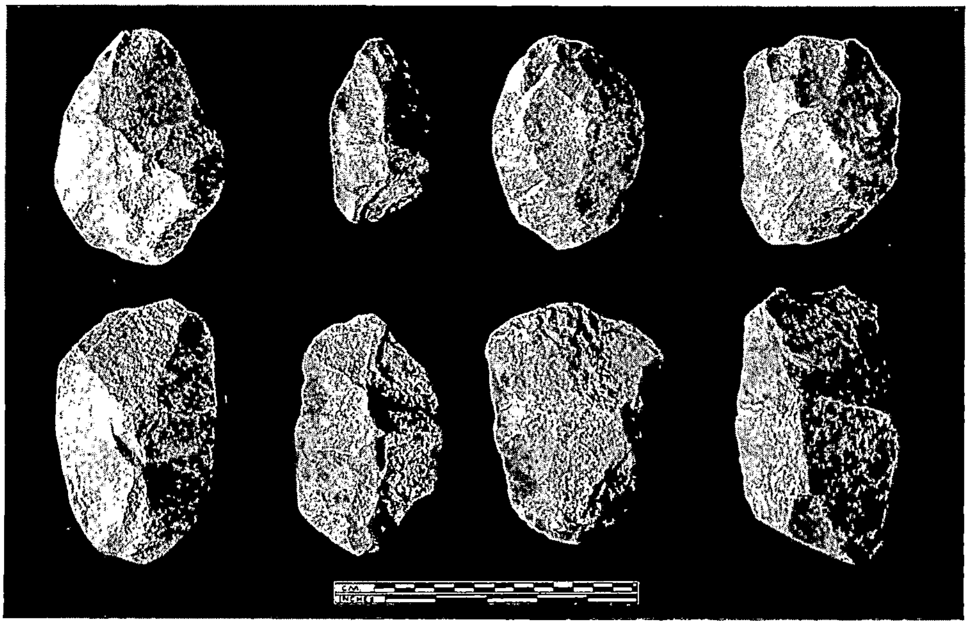
On the evidence of these two trenches, there appears to be a succession of Acheulian industries. The early Acheulian stage is not clearly represented, although it occurs at Hoshangabad in the basal gravel of the Narmada deposits. However, some of the worn out implements found among the boulders on the Adamgarh Hill are comparable to those found in the Narmada basal gravels. The tool-bearing red clay and debris of Adamgarh is similar to the red concretionary clay exposed in the lower group of the Narmada deposits. De Terra's theory (1939) that this concretionary red clay is the horizon of the late Acheulian industries is aptly proved in the Adamgarh excavations also.

In the Narmada sections the deposits of the Lower and Upper groups are separated from each other by an erosional non-conformity. The Upper Group yields only post-Acheulian industries (Late Soan of de Terra) along with re-deposited and rolled early implements. What time gap this non-conformity represents is difficult to estimate. There is no faunal difference between the Lower and Upper Groups, both of which contain mid-Pleistocene fauna. But looking to the evidence obtained in the Adamgarh excavations the time gap does not seem to be a very long one.

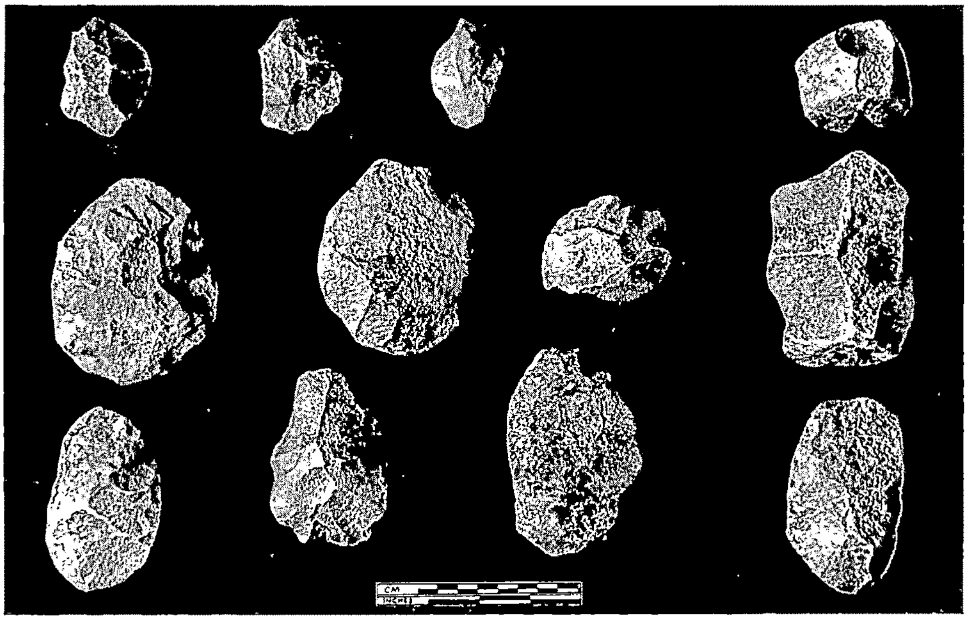
Much importance is attached at present to the occurrence of pebble tools in Indian Early Stone Age industries, ever since these were first reported by de Terra in the Soan Valley of West Pakistan. De Terra (1939) regarded them as an independent tradition distinct from the Madras hand-axe industries of South India. But later, when similar pebble implements were noticed at almost all the palæolithic sites, their occurrence in remote places was explained as due to either migration or diffusion (Krishnaswamy *et al.* 1951). A similar argument was advanced when hand-axe industries were found in the Soan Valley. The northward spread of the Madras tradition and southward march of the Soan were considered the only explanations for their occurrence all over this vast country.

At no site yielding both these industries have pebble tools of Soan type occurred in a deposit stratigraphically earlier than the horizon containing hand-axes and related tools of the Madras tradition. However, the Oldowan pebble culture of Africa is stratigraphically proved to be the earliest Stone Age industry there (Clark 1962), and since there is a close typological parallel between African and Indian early palæolithic industries, it had been assumed that Indian pebble industries were similarly earlier.

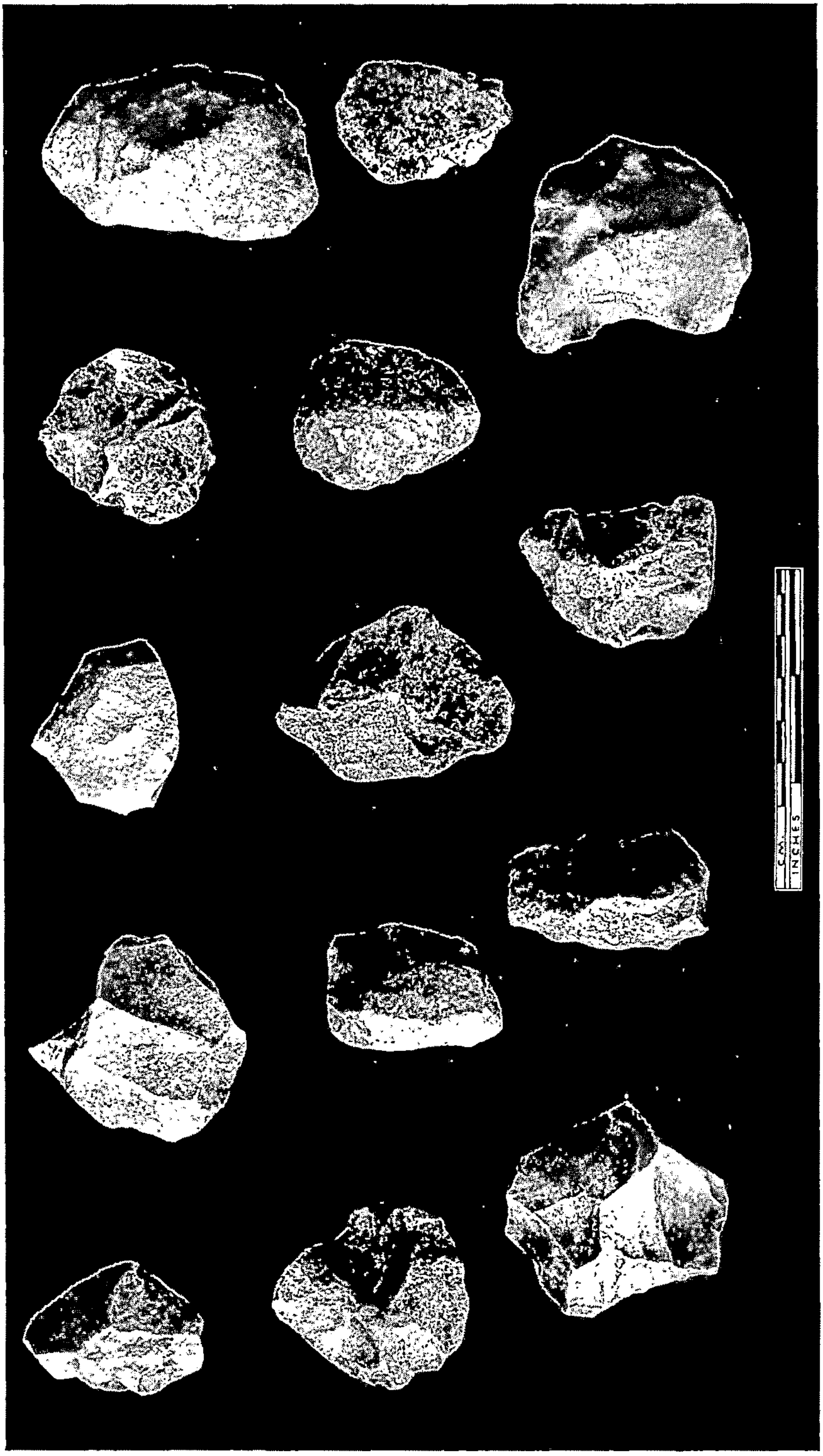
In India, pebble tools are inseparable adjuncts of Acheulian and post-Acheulian (Middle Stone Age) cultures. This is evident wherever the total collections from stratified deposits are available. The proportion of pebble tools to hand-axes in a



a. Early and Middle Acheulian tools from Adamgarh.



b. Late Acheulian tools from Adamgarh.



Post Acheulian tools from Adamgarh.

certain collection is not an important factor, for at some sites pebble tools occur in larger quantities than hand-axe tools while at other sites it is the other way about. Even with pebble tools, sometimes the emphasis is on the proportion of unifacial and bifacial types, and if a parallel were drawn with African Kafuan and Oldowan pebble industries, the unifacially trimmed choppers would have to be considered earlier.

The Adamgarh excavation has conclusively proved that no such distinction can be made, for unifacial types occur even with late Acheulian industries. The term 'pebble tools' is in fact inaccurate, since even the tools of hand-axe category are sometimes made of pebbles (Clark 1962).

Therefore, the term 'chopper group' is preferable and should include the tools trimmed in one or both directions. The advantage of pebbles as the raw material for such implements was pointed out above. The predominance of the chopper group in the palæolithic industries of some sites should be attributed to the ecological aspect of the site, and should not necessarily be regarded as a different tradition until of course it can be demonstrated stratigraphically as well.

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4

A New Grave Complex in West Pakistan

A. H. DANI and F. A. DURRANI

Very little has been found in West Pakistan to bridge the gulf between the Bronze Age Indus Civilization and the early Buddhist cultures of the historic period. A few sites of the first millennium B.C. and some late cairn burials were noted in the hill districts of Baluchistan,* but they remained ill defined. In the meantime the Italian Archæological Mission in Pakistan, led by Professor Tucci, accidentally discovered three sites of Bronze and Iron Age cemeteries near Mingora in Swat State, West Pakistan. They include graves of different periods with a good amount of pottery, some bronze objects and one doubtful example of iron. The discovery of such graves for the first time led to an enquiry into the pre-Buddhist remains in this part.

An exploration conducted by Dr A. H. Dani in the northern part of West Pakistan, particularly in the region of Gandhara, showed a widespread distribution of this grave complex. Local people refer to them as *kafir* graves, and wherever important Buddhist remains, particularly habitation mounds, are located, these *kafir* graves are invariably found under a stand of shady trees. They have so far been located in a number of sites in Dir State, viz., Timurgarha, Ziarat in Talash Valley, Chakdara, and Thana in Lower Swat. Similar graves have been noted in the Peshawar Valley near the Panchpir hill, not far from the bank of the Indus River. Thus in extent this grave complex occupies almost the whole of Gandhara, west of the River Indus and goes up to the western border of Pakistan. These graves have so far not been sighted in the alluviated region of the main Peshawar Valley. On the basis of the present finds it seems that the people buried in them spread out from Bajaur, Dir and Swat into the Kabul Valley along the northern hilly routes.

Wherever these graves are located they occupy higher ground immediately below the hill slope. Though the habitation site is not so far identified, it seems that the people must have lived higher up on the hill slopes. This idea is suggested by the latter-day remains of the Buddhists on such spots. The graves are dug down to under the lateritic outwash which has filled the valley in most cases. Wherever they are found they are seen in quite large numbers and a strange thing is that these sites have continued to be used as graveyards down to our time. Sometimes the Muslim graves are slightly placed apart as at Thana and Timurgarha and sometimes they are erected on the top of the *kafir* graves, for example at Ziarat.

These graves do not appear to be uniform in nature. Their exact condition can be known only after extensive excavations in a number of sites. So far the Italians have carried out excavations at Mingora, and the Archæology Department

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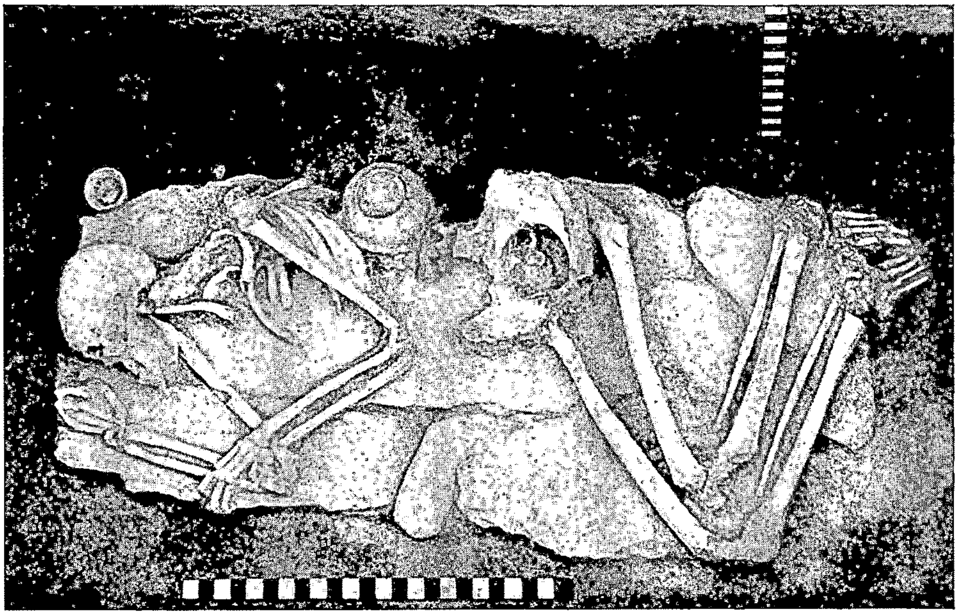
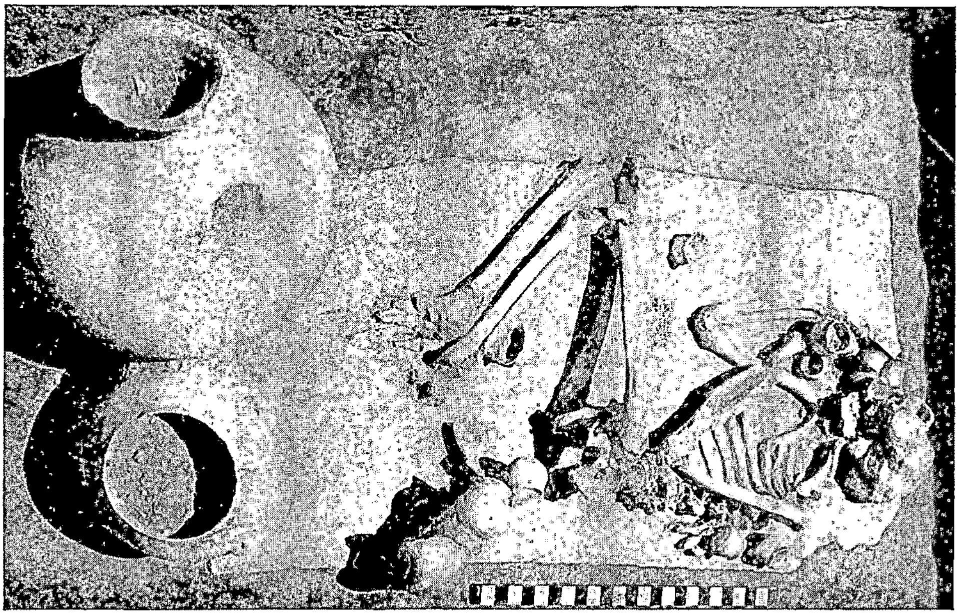
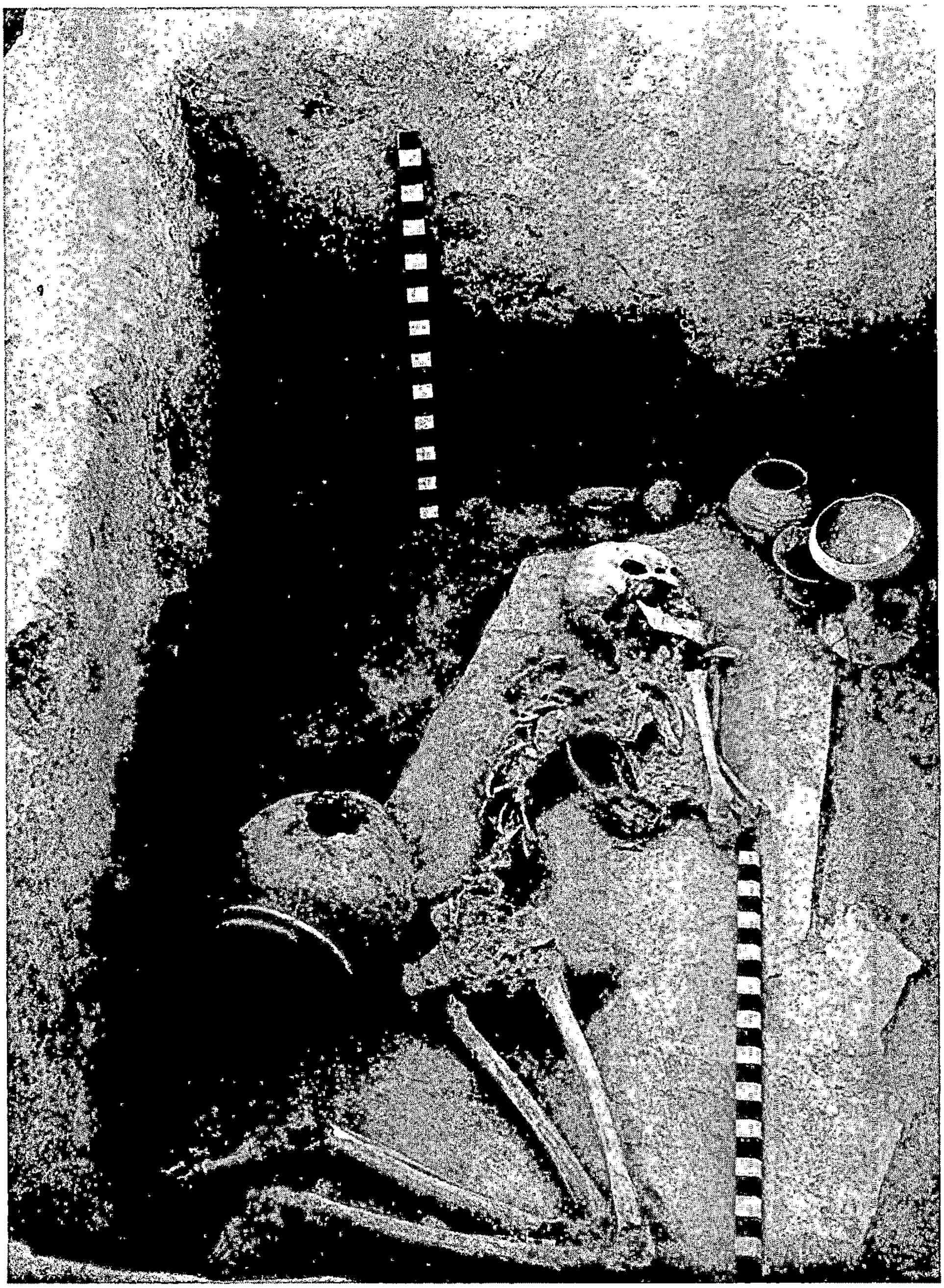
* See D. H. Gordon, *Prehistoric Background of Indian Culture*. Bombay 1960, p.156 ff.



a. Grave with skeleton on a stone slab.



b. Grave, with pots placed near the skeleton.



Thana. Grave with pots placed close to skeleton of Peshawar University has dug a few graves at Thana, under the supervision of Mr F. A. Durrani. At the time of writing Mr Durrani is carrying out excavations at Timurgarha.

In general we can distinguish at least three main types:

1. A longitudinal grave pit generally covered by one huge stone slab as seen at Ziarat and at Chakdara.
2. A grave pit outlined by stone masonry, sometimes having one or two niches, sometimes partitioned into two and covered by more than one stone slab, placed across the body, as at Mingora.
3. A grave pit dug about 3 or 4 feet down from the original surface. A stone slab is placed on the floor (Pl. I*a*) on which rest the skeleton and also the pots. The top is again covered by more than one stone slab placed across the body, and fixed on the ground with smaller chips of stone.

At Thana as well as at Mingora a few pot burials were recovered. The pot found at Mingora has a jar lid with a horse-shaped handle. The relationship of these pot burials with the grave burials is not properly defined.

Leaving aside these exceptional pot burials: in general the graves show inflexed burial, i.e., the legs pulled in towards the body with hands generally joined (some as though in prayer) and drawn towards the head. The face is usually turned towards the east, though in one case it was turned in the opposite direction, probably by mistake. This description applies only to Thana graves. A number of pots are set by the side of the skeleton near the head and body, apparently within easy reach of the hand (Pls. I*b* and II). In one case a bronze ear-ring was found in the grave.

The vessels found in the graves are all wheel-thrown and are mainly of two kinds: (*a*) red slipped jars, and (*b*) dark-grey drinking vessels and cups. The jars are globular in shape with broad open mouth, apparently to hold grain. Dishes on stands are also in this ware. The drinking cups and vessels are of innumerable shapes. All are finely made and show a very thin section. Some of them are joined, generally three in one group. Some of these cups have small pedestals while others have in-curved sides with a pot belly at the bottom and flaring rim at the top. These pot forms are well known and show links with the pots in the cemetery at Sialk. It is hoped that a detailed study will show a definite chronological link with similar cemeteries in northern Iran and around the Caspian Sea. It is too early to be dogmatic about this grave complex, but a rough dating around 1000 B.C. will not be far amiss.

From the above evidence it is now fairly certain that around 1000 B.C. a new people, using mostly bronze and very little iron, migrated from the Caspian Sea, over the northern Iranian route through Afghanistan and into the northern part of Gandhara. Who these people were is difficult to say. Further explorations and excavations will surely throw light on the problem.

5

A Stone Artifact from Lower Mandailing, Sumatra

DONALD J. TUGBY and ELISE TUGBY

This note describes the form and discusses the possible functions and associations of a stone artifact found by the authors on the east bank of the deeply incised Gadis River in Lower Mandailing, North Sumatra in 1956 (map reference co-ordinates: 472843, Panjabungan sheet, 1:100,000 Series, Hind 1058, sheet XLI, 3rd edition).

Two cultural groups occupy this area at present—the Mandailingers, who are wet-rice cultivators, and the Ulu, who practise shifting agriculture. The latter comprise approximately eight per cent of the population. The Ulu village of Aek Banir is 300 metres to the east of the place where the specimen was found.

The artifact was partly buried in the surface of a narrow terrace of fine alluvial material, about three metres above the dry-season river level and about ten metres downstream from a small shelter used by Ulu fishermen when working the large fish-trap nearby.

Form. The specimen is rectangular, with rounded corners in cross-section, and is almost circular in plan (see Fig. 1). The maximum diameter in plan is 6.9 centimetres, the minimum 6·6 centimetres and the depth (thickness) is 4·8 centimetres. In what we assume to be the upper surface is a hollow 2·3 centimetres across and 2 millimetres deep. There is a much smaller and shallower hollow in the lower surface. The hollows and the sides of the specimen are pecked, the shoulders polished (see Pl. I). The weight is 314 grams.

The specimen is made from a holocrystalline igneous rock, probably a syenite which had undergone some weathering. There is no patina on the surface as a whole, but yellow iron staining is visible in some deeper pits which occur in a band of weakness exposed on the sides. There are also some heavy scores which cut across both polishing and pecking. These are lighter in colour, have no iron staining, and are not associated with the plane of weakness. There is no evidence that these scores, or any other features of the specimen, have been caused by water abrasion.

While the hollow in the upper surface is marked, the lower surface is only slightly concave and shows more polish. The pits in the polished area are relatively shallow on the lower surface. On the specimen as a whole, the pits are deeper where a feldspar crystal rather than quartz has been struck because the former is softer.

Function. The general form of the specimen is like that of a hammer-anvil stone made from a pebble, with flat sides produced by use. The 'polishing', however, does not represent the original surface of a pebble because, first, the shape of the polished area conforms with the shape of the hammerstone, not with that of a pebble; and, second, the polished area is fresher than the pecked area. There is

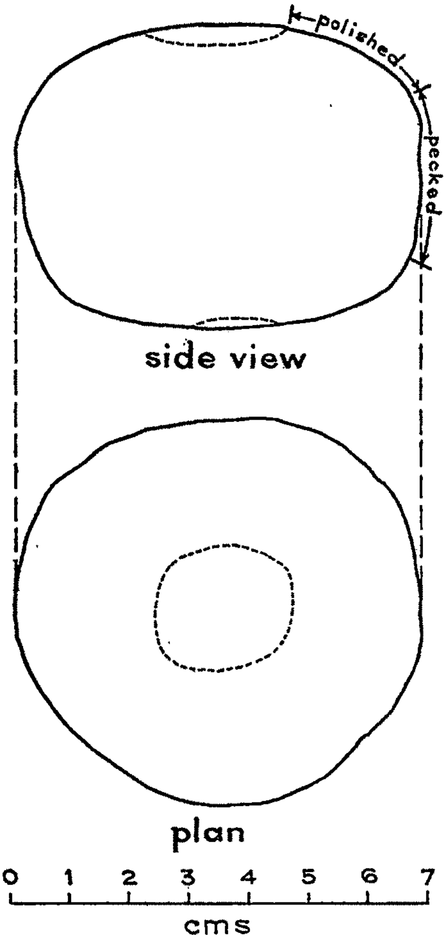


FIG. 1. Plan and side view of an artifact from Lower Mandailing, Sumatra.

no patina. The polishing must, therefore, serve as decoration or indicate that the specimen had a secondary function.

The fact that the specimen was found near the fish-trap would suggest that it was used in the preparation of fish or as a sinker; but artifacts of this kind were never observed in use in these ways (large fishing-nets are not used by either Mandailingers or Ulu). A specimen of this kind was never observed in Ulu and Mandailing workshops.

In the kitchens of contemporary Mandailingers and Ulu, crushing and grinding are processes used every day in the preparation of spices. The materials to be treated are placed on a flat or slightly concave slab, usually of granite, and broken up and ground, using a small stone held in the hand. A sliding and rocking motion is used, sometimes with one hand cupping the other on the stone. The partly crushed material is brought back to the centre of the slab by scraping with the edge of the stone. The crushing-grinding stone is also sometimes used for crushing nuts, which are given a hard blow with the stone. As a result of its multiple functions, the crushing-grinding stone usually has a globular form and almost the whole surface appears half ground.

Thus, in the contemporary cultures in Mandailing, artifacts similar in size and weight to the specimen have a dual function as grinding and crushing stones, but mainly for grinding. If it is assumed that the specimen had at some time a similar function, the polished area can be accounted for.

The gashes and scores which cross both pitting and polishing have still to be explained. They suggest that the specimen, after polishing, was used again as a hammer. The depth and shape of the scores suggest contact with a metal object. Possibly the origin of the scores on the specimen can be that it was picked up recently and re-used to hit the knife, which served to split the bamboo in making the fish trap.

Associations. If it is accepted that the specimen functioned as a crushing-grinding stone, as a hammer-anvil, and as a hammer, the question is in what order these functions were exercised. Only the problem of the order of the first two functions need be considered, because the form of the scores suggests that the specimen was last used as a crude hammer.

Now if pecking precedes polishing on the same surface of a specimen, the depth of pits on that surface will be relatively slight where polishing takes place. On the other hand, if polishing precedes pecking, the pits will have the same depth everywhere (see Fig. 2). When this test is applied to the specimen, it is clear that pecking precedes polishing. This could indicate either that the specimen was first used as an ordinary hammer stone and anvil, and then for a short period as a grinding stone or that it had alternating use as a hammer-anvil and crushing-grinding stone.

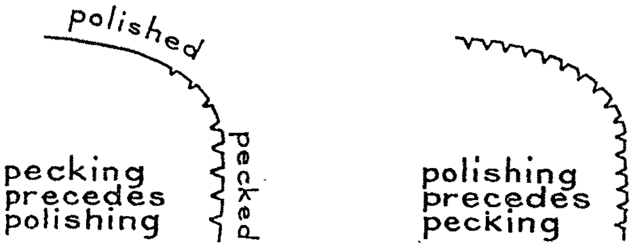
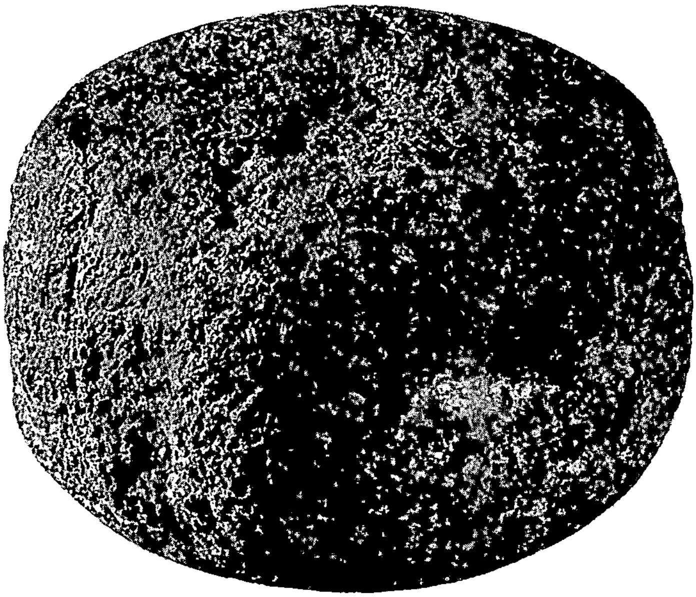
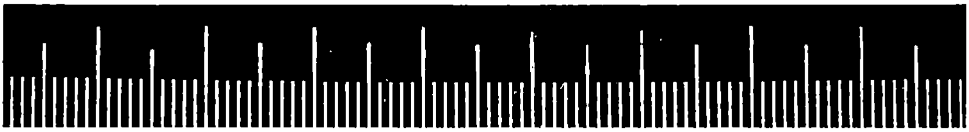


FIG. 2. Relation between pecking and polishing.

Although the specimen was well-embedded in the terrace it is not certain that it was *in situ.* It could have originated in Aek Banir, the Ulu village below which it was found. The Ulu in this area are reported as living in tree houses in the first part of the nineteenth century (Willer and Netscher 1855). The village has probably been in existence since Mandailingers first influenced the Ulu about 70 years ago. Aek Banir is shown on a map of 1911 (Kreemer 1911: App. II). But the site is not far from the old road along which Imam Bondjol's troops travelled from Menangkabau to Padang Lawas in about 1820, and the specimen might have come from some distance.



Stone artifact from Lower Mandailing, Sumatra.
Note polished shoulders, pecked sides, hollow in upper surface
and gash on the side.



Scale in centimetres.

In contemporary Mandailing and Ulu kitchens, artifacts of a similar size are used for crushing and grinding; and larger stones from the river bed are used as cooking stones on the earthen hearth. Mandailing potters hold a rounded stone inside the pot while the wall is patted into shape from the outside. Artifacts of a similar material to the specimen, but of larger size, are used as hammers in the Mandailing smithy. Ulu and Mandailing men sharpen their knives on stone. In Central Sumatra in 1877, mortars made from 'riverstone' (probably a volcanic rock) and small magic stones were in use (Van Hasselt 1811: 13, 35, pls. 31, 82). However, the specimen here described cannot be matched with artifacts that are part of contemporary or historical Mandailing or Ulu culture.

The specimen can be matched, however, with a specialized type of artifact used by the Australian aborigines in historical times and known as the *kulki* percussion stone or percussion-muller (McCarthy 1946: 3, 59, 66, figs. 304–5). The *kulki* percussion-muller is 'cylindrical in shape, with flattened sides and rounded edges where the sides join the upper and lower surfaces.... The upper and lower surfaces frequently bear an anvil-pit in the middle and evidence of use as a muller' (*ibid.* 59). The *kulki* percussion-muller is widely distributed in inland Australia and ranges in diameter from 5 to 15 centimetres. In a sample of thirty-eight *kulki* percussion-mullers from eastern Australia (mainly New South Wales) examined in the Australian Museum, Sydney, pits or hollows formed by percussion were found on both surfaces in twenty-four specimens and on one surface in fourteen specimens; polishing occurred on both surfaces in twelve specimens and on one surface in nine specimens. The function of the percussion-muller which results in polishing of the surfaces therefore appears to be secondary. The mean diameter of the specimens in the sample was 7·2 centimètres. The *kulki* percussion-muller was used as a hammer for shaping other artifacts, as an anvil (the pits or hollows on the surfaces were formed when crushing hard nuts—McCarthy, personal communication), as a concussion stone (two specimens were struck together under water to drive fish into nets), and as an occasional upper grinding stone or muller. *Kulki* percussion-mullers were carried about and used by both aboriginal men and women in northern Australia (Tindale, personal communication). The form of the specimen described here is therefore very similar to that of the Australian *kulki* percussion-muller as a type, and we may assume that its functions were similar. Specimens with similar functions have been described as occurring in Hand-Axe Culture remains in shell heaps on the northern part of the east coast of Sumatra (Heine-Geldern 1935: 306); but recent work on lower palæolithic artifacts from Indonesia has not revealed specimens of the same kind (Soejono 1961).

Summary and Conclusion. The specimen is multi-functional; it was probably used as a hammer, as an anvil for crushing nuts, and as a crushing and grinding stone. It cannot be matched with known artifacts from contemporary or historical Mandailing or Ulu culture and may be regarded as prehistoric in Sumatra. It is similar in form to the *kulki* percussion-muller which was used by Australian aborigines in historical times. A similar specimen, to the authors' knowledge, has not been reported from Lower or Upper Mandailing. The specimen is therefore intriguing

6

A Stone and Bronze Tool Cave in Sabah

TOM HARRISSON

1. BACKGROUND MATERIAL

Fifty-one years ago, the Royal Anthropological Institute published a report by the late I. H. N. Evans on a collection of stone artifacts purchased from Bajau and Illanun Mohammedans on the Tempassuk River up to Kota Belud, ten miles inland from the northwest coast of Sabah (then British North Borneo). The Sarawak Museum has casts of most of these, including those illustrated which are relevant here (Evans 1913: figs. 1–3 and 5–8). These were either functional hard adzes, chisels and gouges of hornstone and basalt, often brightly coloured; or soft tools probably for burial use, made from 'clay-stone'. The latter relate to many tools later collected by me from native sources further south in Brunei, Sarawak, and Kalimantan. Soft tools also occur *in situ* at Niah (Harrisson 1951: 1; see also Evans 1913: 56 for general remarks, and Queensland Museum specimen from Sabah in Section 4 below). The Evans collection, now divided between the University Museum of Archæology and Ethnology at Cambridge and the Raffles (now National) Museum in Singapore, has until recently remained unique for northern Borneo. It includes an excellent series of rather small, squat, highly polished adzes of the form H. R. van Heekeren has lately called 'roof-shaped', but perhaps better described as trapezoidal. The Sarawak Museum has by exchange an original, very worn trapezoidal adze presented by C. Hose to Cambridge many years ago, provenance 'North Borneo', material Segama stone, 66 × 41 mm, fully matching Evans' series (our S.M. cat. no. 4719).

Trapezoidal adzes, in this definition, have a relatively wide, flat lower surface. Both sides of the upper surface rise evenly at an angle of less than 45° (usually much less) to a well-marked flat central ridge up to half an inch wide (usually a quarter-inch). This ridge distinguishes the type from other adzes of Southeast Asia. It usually runs evenly back to the butt, or tapers down slightly in width, but some of these attractive tools have been much reworked and reduced, so that this effect is obscured. In one instance, there is a central 'waist' effect along the ridge, as in some related Polynesian material (see below). The working face is flat and finely polished, with a straight forward edge running right across the base and sloping back at an angle of 25° or less to form a near-triangle with open apex (the forward end of the ridge). The butt is either cut off flat or left rough, in sharp contrast to the finish elsewhere. The length is seldom more than twice the width, often much less (Pl. II*a*).

The general effect is of an artifact significantly and consistently different intechnique and tradition from the familiar quadrangular adzes, round axes and stepped adzes which dominate the region. Heekeren recognizes this type from East Java, Bali, The Moluccas, Ambon and Ceram; that is, southeast and south of Sabah.

Chisel-form variants, also found by Evans near Kota Belud, occur in the Philippines as far north as Luzon, while there are at least superficially related tools in east Polynesia. They are dominant in Samoa and fairly rare on Pitcairn and the South Island of New Zealand—a distribution well discussed by Roger Duff (*Indonesia,* van Heekeren 1957: 130 and pl. 40; *Philippines,* Lynch 1949: fig. 21; *Polynesia,* Duff 1945: 153 and 1950: 161–171, Duff's type IIC). However, nowhere in our area have such tools hitherto been located archæologically. Nor are close parallels found in extensive cave and other excavations conducted further south and west in Sarawak and Brunei. Re-examination of some 900 stone tools collected or excavated since 1947 from sequential deposits at Bau and Niah (now in the Sarawak Museum, mostly still unpublished; cf. Collings 1949; Solheim 1960) has located nothing similar.

2. Segama Cave Stone Tools, 1964

In September 1964, this static situation was resolved by excavations in the upper reaches of the Segama River, 130 miles east of Kota Belud, by a Sarawak Museum team led by Barbara Harrisson and Michael Chong, under Sabah Government auspices and finance (Pl. I). At Tapadong cave, below a 6-inch surface seal (loose at the edges) of sterile guano and leaf dust, nine perfect adzes, one gouge and many fragments were found associated with three metal items and distinctive native earthenware (Section V below). There was no porcelain, stoneware or glass, and no signs of habitation, foodshell or bone. This was a burial cave, mainly 'secondary burial' (Harrisson 1962).

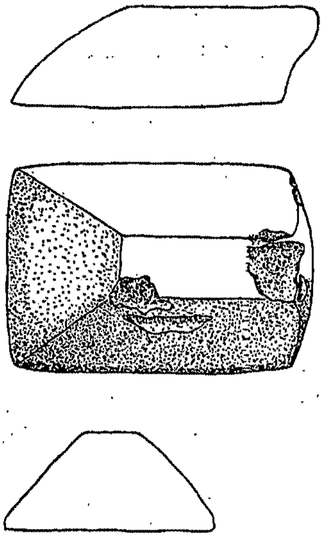


FIG. 1. Trapezoidal polished adze from Tapadong Cave, Sabah, at D1, 15″ 6/9/64; original size 3¼″ long.

Sabah's Tapadong held none of the polished tools characteristic of Sarawak's Niah and Bau Caves and the earthenware was conspicuously different, except for some of the most widely distributed paddle-beater and cordmark patterns as analysed by Dr Solheim. (The definitive Sarawak paper by Solheim is in press [*SMJ*] including 14 statistical tables, 17 pages of text figures and 15 pages of plates; for wider discussion and the Bau complex see Solheim 1964: 200–202 and 208–209.) The Tapadong adzes intermesh with the Evans collection, and are often of the same stone, which occurs geologically a little further up the Segama. Relevant rock types including chert, chalcedony, basalt, and hornstone and their distribution in the Segama River are fully described and mapped by Dr F. H. Fitch (1955: 26–34). Fitch, Dr H. Kirk and Dr N. S. Haile, with the long term help of Dr P. Collenette, worked as field geologists and greatly helped our initial Sabah Cave survey. (For scarcity of tool stone further south, *see* Harrisson 1959; and Harrisson and Medway 1962*a*: 228.)

The size of the Segama Cave adzes equate with the lower size range of Evans's material.

	Length × Width (max. in mm)	
	Evans collection (8 perfect)	*Tapadong cave (9 perfect)*
longest	73 × 44	68 × 21
'squarest'	58 × 40	42 × 31
shortest	52 × 32	35 × 25
median (approx.)	65 × 41	42 × 31
cf. Hose Collection (see p. 171)	66 × 41	

The smaller Segama adzes probably reflect no more than a local variant (Pl. II *a–b*). There is also a preference for larger stone artifacts, which almost throughout Borneo are considered to be thunderbolts. They are highly esteemed for a wide range of mystical uses, notably as small-pox 'vaccination', as fertilizer for harvests, and as insurance against vulnerability in battle, when they are worn strapped to the waist. There is clear evidence that other east Sabah Caves have been looted by Mohammedans over the last five centuries, and that stone tools were among items taken and traded. It is also possible that the smaller, more worn, tools were especially selected as burial furniture—a point to be clarified by further excavations scheduled.

I started analysing cave potentials in Sarawak in 1947 and in Sabah in 1952, when I did a long overland exploration from Ranau through to the Padas headwaters. Reconnaissance in Sabah was concluded in July 1964, with a full examination of the great Gomantan Massif near Sandakan. The Segama sector was chosen for full study as the first part of a plan to be continued (with Sabah government and other funds) into 1965–6, using highly trained technical staff. (For the area's ethnic background see Harrisson 1964; Tarling 1963: Ch. 3–4 on Illanun anarchy.)

Here we must also notice a single trapezoidal adze (44 × 33 mm) stylistically and geologically fitting the Tapadong Cave series, which I excavated in 1960 with Dr P. Collenette form a limestone cave on an islet, Pulau Burong, at the southernmost fringe of Sabah waters, 80 miles southwest of Kota Belud. This secondary burial site was also characterized by the three-colour-ware pottery extensively used for secondary burials at Niah, 140 miles further southwest, and not yet identified

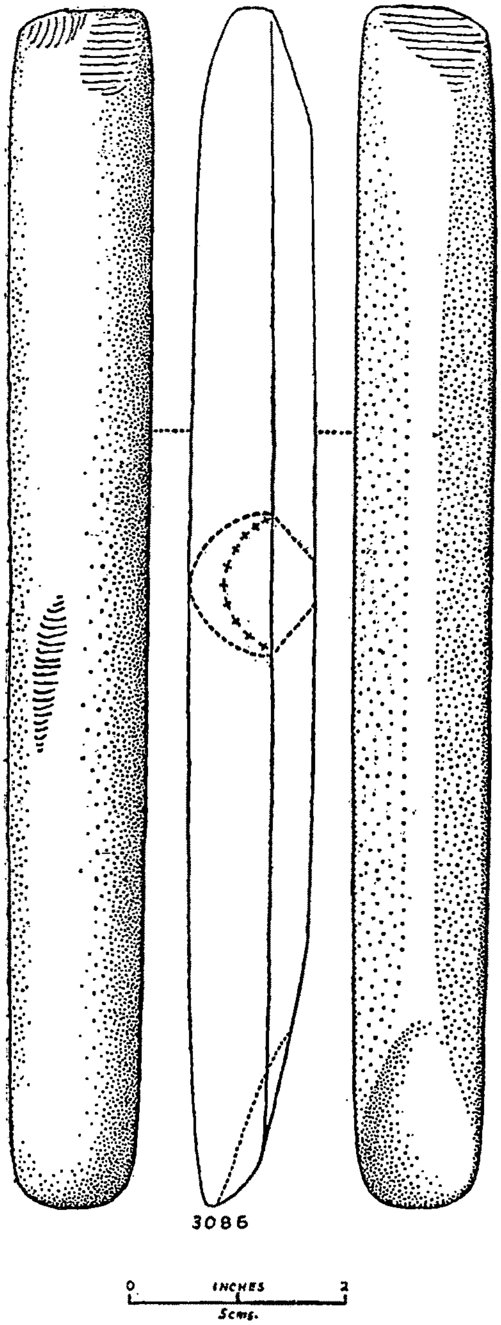


FIG. 2. Perfect long gouge from near Merapok, Brunei Bay (cf. Collings 1949).

over on the east coast. (One of the great three-colour burial urns from Niah is the colour frontispiece to *AP*, 3[ii], 1959, in conjunction with a paper by Solheim *et al.*, including pls IV–VII.)

Finally, at the end of the excavated Sabah series, we have a single gouge, found with the adzes, at 11 inches in Tapadong. This is close to the longer trapezoidal adzes, with the same upper body and roof. But instead of a flat, triangular forward face and corresponding flat under-surface, this one is curved to give a concave gouging edge, a long, gentle arc (Pl. II*c*–*e*). Again, there is parallel material collected by Evans round Kota Belud, for instance: *(i)* Evans—91 × 35 mm; butt irregular, partly worked; *(ii)* Evans—81 × 32 mm; butt showing secondary breaks; Tapadong —76 × 32 mm; butt worked flat.

The breaking and reworking of such tools is confirmed by a prototype of these gouges, a completely finished example, 278 × 35 mm, which I got from Sabah Muruts near Merapok, 10 miles behind Brunei Bay, on the Sarawak border, in October 1947. The monster gouge (S.M. cat. no. 3086) is figured in Collings (1949: fig. 1). Related gouges are found south into Brunei Bay where over 200 tools were collected, but they do not occur up the Rivers Trusan, Limbang, and Padas which drain upland Sarawak and Sabah. Similar gouges are known from the Philippines to the north, but none yet from Niah or elsewhere south of Sabah. A somewhat similar form is drawn in an ideal classification for Malaya by H. D. Noone. No corresponding Malay specimen can at present be located, but I have seen a related piece from Sungei Mas, which is in the British Museum (No. 1935.10.22), close to others there from Java (Nos. 8586/7). Noone (1941, fig. F1) is the source of the Malayan uncertainty. The British Museum tools were studied in 1949 and not checked for this report (*see also* Tweedie 1953).

Except for easy breakage, these long gouges present minimum handling and hafting problems. The squat adzes are more difficult, but we have no published data on this aspect. Fortunately—and uniquely for Borneo—one of the Tapadong tools, 41 × 32 mm found at 18 inches, has emphatic haft-grooves meeting as two V-marks across the back which in this case is not quite flat. The grooves cut deeply into the sides which (again in this case only) are slightly flattened before the upward angular slope. Groove width is nearly 8 mm at this edge; there is no marking across the upper surface (Pl. II*b*).

3. METAL ASSOCIATIONS

A beautiful bronze socketed axe (46 × 37 mm, Pl. III*a*), just like several described by van Heekeren among stray finds from Indonesia, was excavated, in common with the above stone tools, between 12 and 18 inches at Tapadong (van Heekeren 1958: pl. I*f* and at p. 8). There do not appear to be any stratified finds of bronze tools in Indonesia, while the six previously known for Malaysia were all found casually in association with gold- or tin-mining operations. At Niah, high-quality bronze pieces have been found in the topmost levels, including bells and parts of a mirror; but tools have been either stone or, at the surface, iron.

This Tapadong metal-stone association is not isolated. Equally unprecedented is part of a mould for making a simple bronze gouge by the *cire perdue* method

(Pl. III*b*). Although this was only at 3-inch level, it lay in Trench E5 against one side wall under drip erosion from the cave roof.

These clues, though small, strengthen the hope of finding in the north an ancient bronze industry native to Borneo. In a report completed a year ago, I postulated the manufacture of high quality bronze figures in Borneo, separate from but corresponding to the overstrained conception of Dongson. In particular, I analysed a superb little masked bronze figure of a flute player with hornbill head-dress, collected in 1961 from the far interior of Sarawak; since then, we have two more from the same area. (Hornbill bronze is fully discussed with 12 figures in Harrisson 1964; later interior examples not yet published; photos available.) The later development of bronze-working in Brunei is well known, though even protohistorical background is still lacking. Similarly, there are strong indications of local bronze prehistory in the northern Celebes, 300 miles south-east of Tapadong (van Heekeren 1958: 6, for other references to Celebes bronzes).

The other metal item found at Tapadong is an exceptionally delicate, very worn iron spear blade, almost fine enough for a large arrow-head (59 by 24 mm), also in the 12- to 18-inch layer. I have never seen so fine a blade, either in use or in excavation, elsewhere in Borneo. It looks as if it would snap if it struck anything. Both the metal itself and the workmanship suggest a special and valued object rather than a functional implement. In association with the bronze and stone tools, this surely ties up the whole deposit as predating the main T'ang period introduction of a local iron industry and import ceramics, massively documented from our Sarawak River delta sites as well as from Niah (see *SMJ* 1949–64; *Oriental Art* 1959–60; *Trans. Oriental Ceramic Soc.* 1954, **28**[i]).

4. OTHER SIGNIFICANT STONES

Many extraneous stone flakes, chips, broken tools and some cores occur in Tapadong, notably a pretty green chalcedony, found locally and closely resembling jade. Similar pieces occur in the top level at Niah Great Cave in association with late neolithic burials there—hitherto a puzzle, since jade itself has not been found archæologically in Malaysia or Indonesia. One Niah chalcedony could be regarded as a spearhead, one from Tapadong as an arrow-head. (No other Sabah stone has been found at Niah.)

Evidence for the bow and arrow remains extremely confused in our area, and there is no historic usage in Borneo. Stone arrow-heads have been found in Sampong cave, Java and irregularly elsewhere, but are usually conspicuous by their absence in cave excavations. Tapadong has produced several beautiful points, including one of chert in three colour tones which, nevertheless, just could be a scraper. However in the Toale Caves of Celebes authenticated stone arrow-heads occur abundantly in association with earthenware sherds. These differ from the Javanese type in being smaller, flatter and generally chipped on one face only as is also the case with the Tapadong examples. Some from Toale are barbed, others unbarbed; all possible Borneo arrow-heads are unbarbed (for Toale series, see van Heekeren 1957: 133 and pl. 45 where the two barbless ones are very close to Tapadong; cf. also Creagh 1896, *passim*).

Some quartzite stone pounders and/or pot-stones match one from the Pulau Burong Islet Cave, a very general form associated with earthenware pottery and still in use among the Tomani Dusuns of Sabah and the Kelabits of upland central Sarawak and northern Kalimantan.

From six inches subsurface comes a heavily worked largeish flake (53 mm long) of red chert, which if found separately would certainly be classed as mesolithic, probably Hoabhinian. Closely similar, and of the same stone but larger (65 mm), is one of three flake tools found with pottery by a Mr Hurov in a cave in the Interior Residency, Sabah, near Pensiangan. Also similar and of Tapadong chert is a largeish flake tool (67 mm)—a stray find from the Segama River, given to the Queensland Museum in 1888. Dr John Mack, Director there, has kindly presented this to the Sarawak Museum, together with a very rough round axe from the same Segama source, made of soft clay-stone and quite unusable (Nos: [Brisbane] 1888/5/142–3).

Increasingly, we are finding these and other flaked tools of Hoabhinian, Sumatralith and similar sorts in fully neolithic Bornean context. Our field experience raises cumulative doubts as to the safety of visual judgements of the age of the less sophisticated tools (palæolithic, etc.), unless these are firmly anchored in a sequence or other datable setting. That polished tools are 'late' is probably clear enough—but some have been made around Niah in the last century! That crude-looking unpolished tools are necessarily earlier can be a serious fallacy. The live situation, millenia ago, was much more complex than most artifact classifications imply.

The other noteworthy Tapadong stone is a splendid large bead of polished blue stone (23 mm long; ? lapislazuli), unlike anything previously known to us. This and a more ordinary small tubular stone bead (? chalchedony) were found subsurface, close to the *cire perdue* cast.

5. EARTHENWARE AND BONE

Much of the earthenware was different from that previously excavated in Borneo, as already indicated. This is still on its way by sea at the time of writing and will be studied separately we hope, with the continuing advice of Dr Solheim. It is exclusively funerary ware, predominantly small vessels, never coloured.

The only unbroken pot, from 14 inches in Trench C4 (towards the centre of the cave) deserves special mention (Pl. IV), not only because it is unlike anything from Niah or Bau, but because it is very similar to a 'bowl on a stand' collected by Walter Kaudern in Celebes 45 years ago (Fig. 3). Kaudern's has mouth-rim and stand-ring 'adorned with a range of small notches', and this is the only and irregular decoration on the somewhat lower-standing Tapadong piece. Amusingly, Kaudern was worried at a name scratched in the bowl, which indicated to him that the pot came 'possibly from the European Missionary school'. Either the scratching was done later, which is possible, or the ware has survived widely—for the Segama parallel seems too strong to be casual and the piece too thoroughly buried to be intrusive, besides being placed in the characteristic upside-down position (Pl. IV*a*) of Borneo neolithic burial pottery (Kaudern 1944, **6**: 158 and fig. 117). [For rim and flange notching from: Gua Sirih in southern Sarawak and Palau Burong, near Labuan, though associated with incising, *see* Solheim *et al.* 1959: fig. 4 and pl. VII *a* and *c*. Cebu, Palawan and unknown site somewhere in the Visayan Islands in the Philippines *see* Solheim 1964, pl. 43*f*, pl. 35 *d* and *g*, and pl. 21 *a*–*b* and *d*. *See* Solheim 1965*b*: 307, for new information on Site C67 in Palawan affecting sherds pictured in pl. 35 *d* and *g* of Solheim 1964.—*Ed.*]

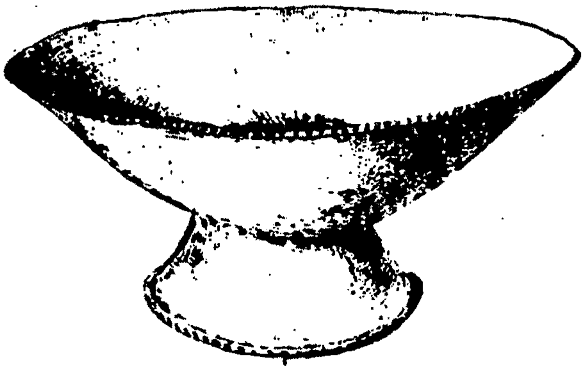


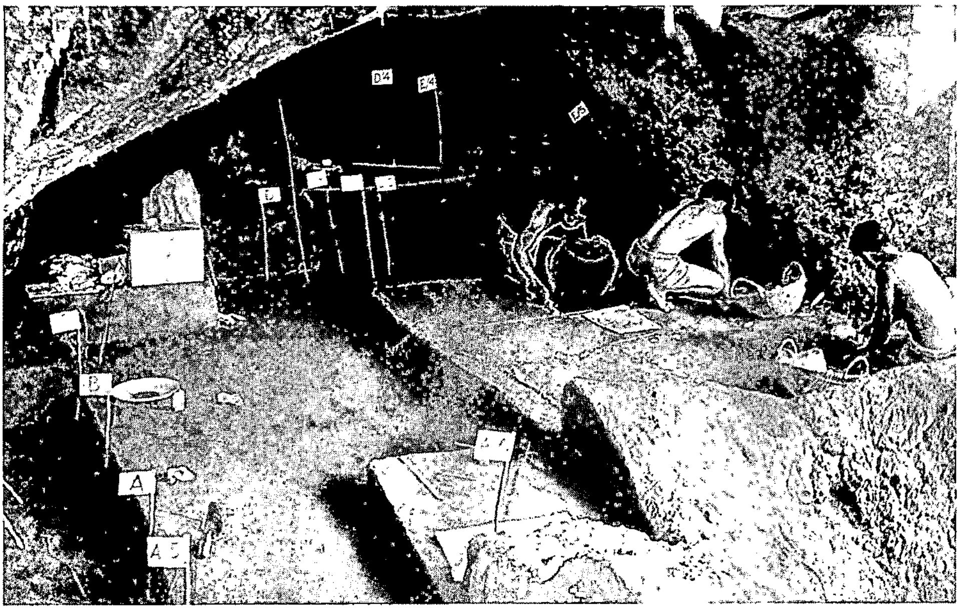
FIG. 3. Earthenware bowl with ring foot from Celebes (from Kaudern 1944: 6).

The only other manufactured item in this cave was a bone plaque (27 × 23 mm), broken, of type F as classified by Lord Medway and myself in *AP*, **6** (Harrisson and Medway 1962*a*, an abbreviated version of Harrisson and Medway 1962*b*, where type F is discussed p. 343, and illustrated.)

6. WIDER IMPLICATIONS

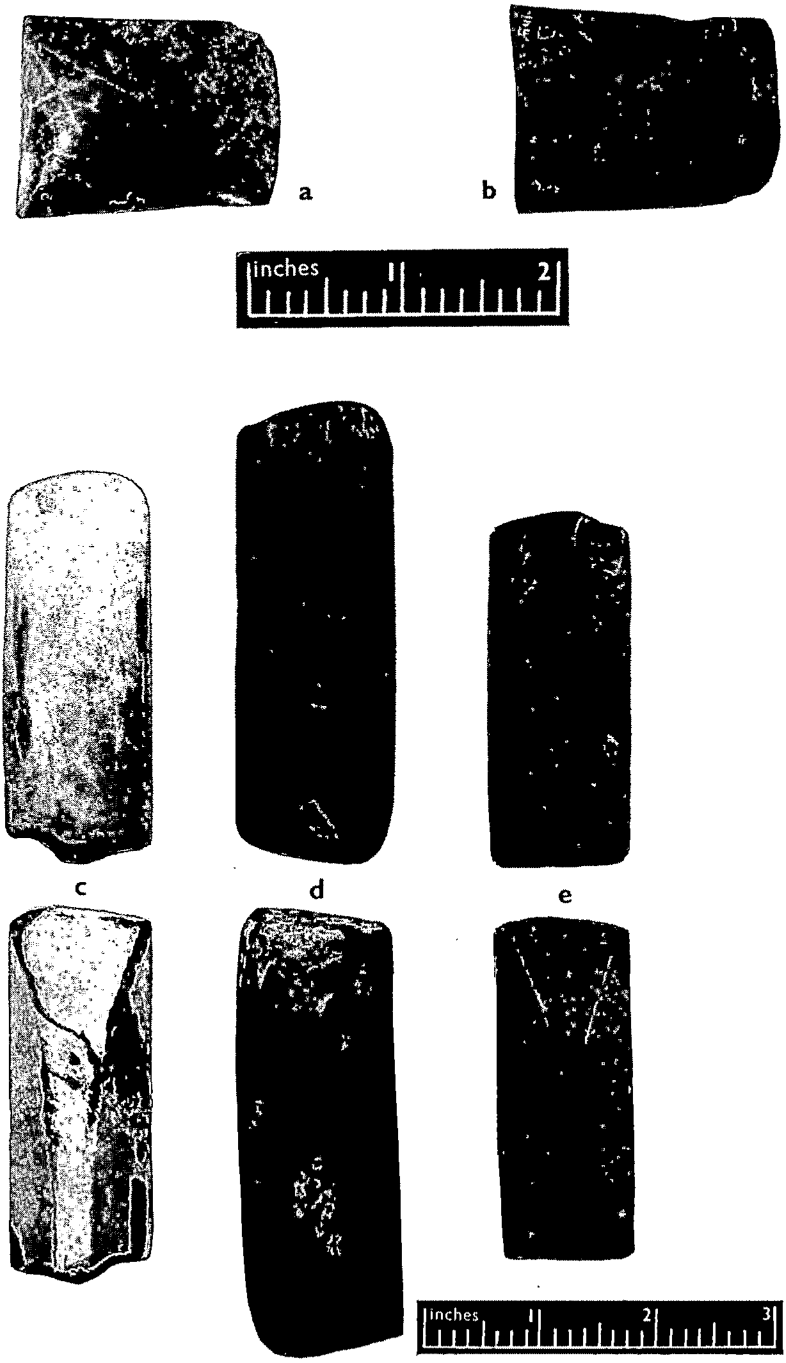
These cave results, though preliminary, confirm earlier clues from the first Sabah excavation on Pulau Burong in 1960 and Evans's pioneer collection of stray Stone Age materials. One striking aspect is a seemingly sharp geographical division by which, above latitude 5° N, neolithic tools and pottery are found unlike the now well-established range of types which occur over much of the remaining seven-eighths of Borneo. Also striking is the homogeneous character and specialized range of the Tapadong stone material compared with that of most Borneo caves, and the relatively high frequency of extraneous stone in a shallow cave with a light area of less than 400 sq.ft.

If it is fair to take this cave and the much smaller Burong one as indicators, we may expect consistent but rich results from extended work in Sabah during 1965–66. In particular, the prospect of finding for the first time in the region bronze and iron tools together, in direct association with late Stone Age materials, promises to illuminate the most obscure period in the area's prehistory. This lasts roughly from the 5th or 6th centuries B.C. to the massive advent of new tools and techniques from the northern mainland at the time of the T'ang dynasty (A.D. 618–906). Unfortunately, Tapadong provides poor dating material. In the present state of our knowledge of the northern tip of Borneo, it is unsafe to say more than 'before A.D. 500.'



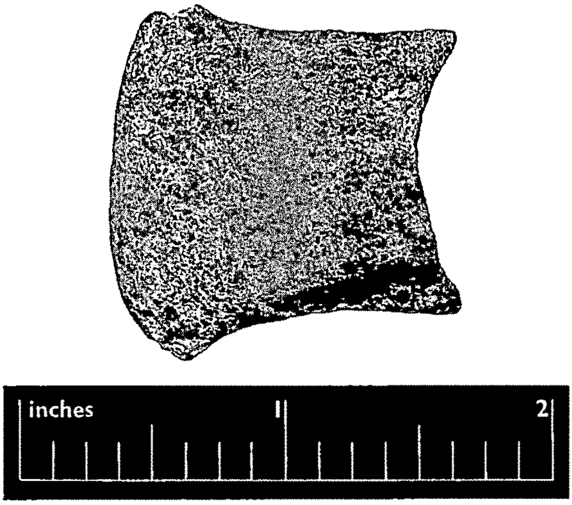
Tapadong Cave, Sabah.

Above: Looking out of cave mouth over the Segama River.
Below: Excavation in progress. See p. 172.

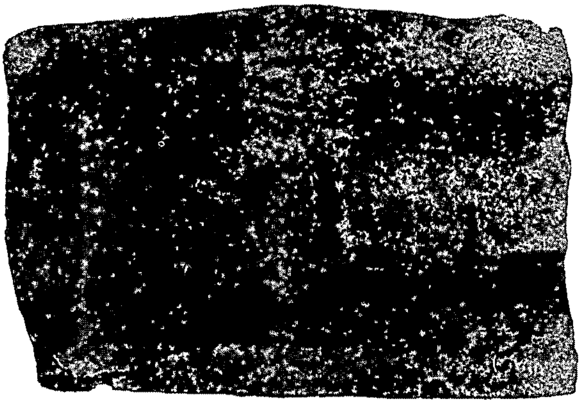


Polished stone tools from Sabah.

a. Typical trapezoidal adze. See p. 171. *b.* Unique haft-grooved trapezoidal adze.
c–d. Gouges from Evans Collection. *e.* Gouge from Tapadong Cave. See p. 175.



a

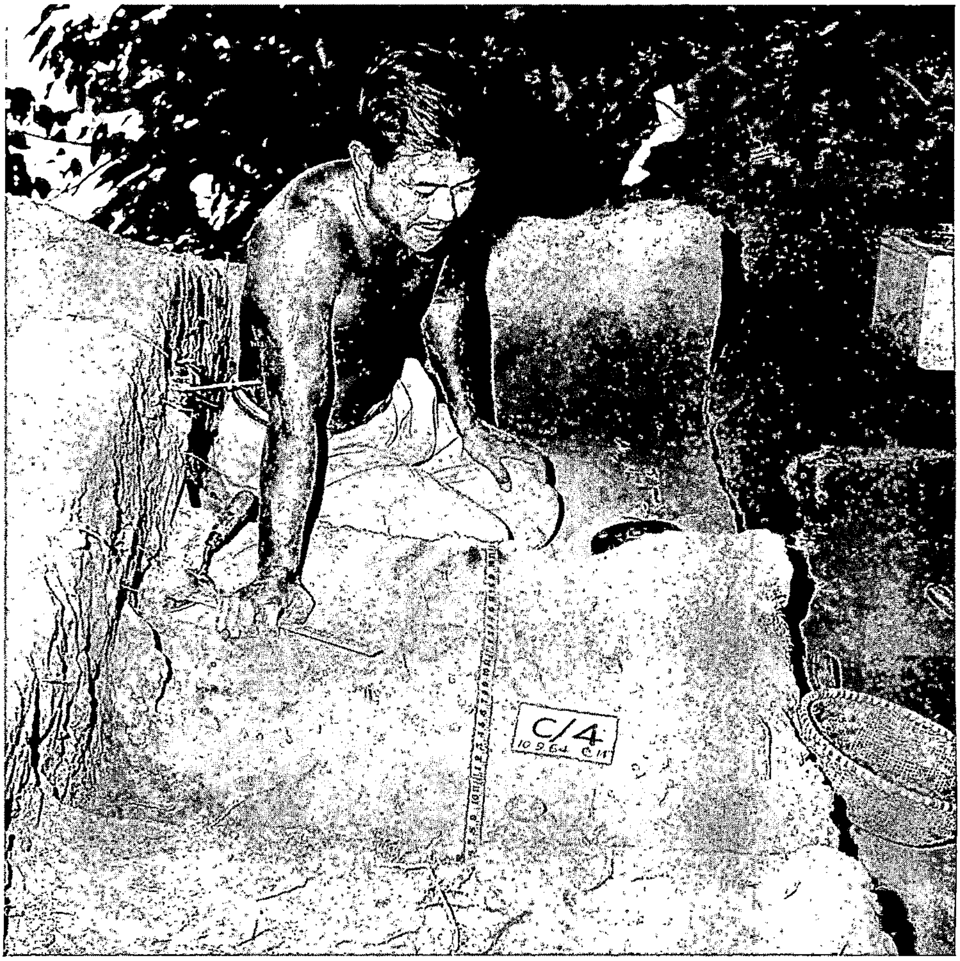


b

Finds from Tapadong Cave, Sabah. See pp. 175–176

a. Socketed bronze axe.

b. *Cire perdue* mould for bronze gouge, inner face.



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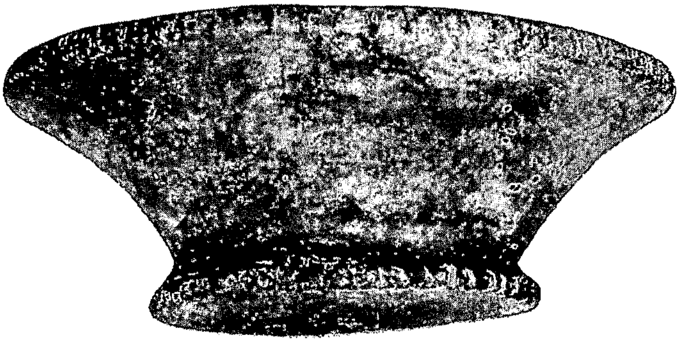

b

Earthenware bowl from Tapadong Cave, Sabah. See p. 177.
a. *In situ*, lying upside down. *b*. After removal.

Clearly, one message from these results so far is that there are many affinities between West Borneo, Sumatra and Malaya at the end of stone and beginning of metal. They are different in character from the north end of Borneo (and probably the northeast side of Kalimantan), where stone and metal affinities point towards the Celebes and Moluccas, up into the Sulu Sea and down into the Lesser Sunda Islands. Further research may show that the great mass of Borneo acted as a major obstacle in the lateral diffusion of ideas and objects, until the development of advanced navigation and specifically the compass. Indeed, there are plenty of historical indications that this was so even into the era of steam and European colonial activity. The result was not necessarily cultural stagnation or technological decay. On the contrary, there existed locally a complex and variegated set of relationships.

Most of the general theory and writing about Southeast Asia already requires drastic revision. Those pleasant, logical systems of arrows and shadings which almost every writer has been deploying into 1964 seldom represent anything more than supremely confident acts of the imagination, in postulating the directions of human movement thousands of years ago, nearly always without authentication and not infrequently in contradiction to geographical probability, the requirements of sailing ships and even common sense. Further research, especially in the sector Sabah-Sulu-Ceram, is likely to underline current misapprehensions and introduce disturbing new factual information not easily and fluently to be explained away on a modern map. (For two typical recent over-simplifications see Macmillan's *Atlas of Southeast Asia*, London 1964, 5 maps, introduction by Professor D. G. E. Hall [reviewed here on pp. 138–9]; and Professor Graham Clark's *World Prehistory*, Cambridge 1961, which is mainly admirable but remarkably weak, by contrast, on Southeast Asia.)

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7

Potsherds from Bougainville Island

RICHARD SHUTLER JR and MARY ELIZABETH SHUTLER

The potsherds described in this report were collected by Conrad Johnson Jr, in 1949, from the village of Tiop, on Bougainville Island. It is a surface collection from a banana grove. We are grateful to the University of Colorado Museum of Anthropology for permission to study the collection.

We do not know whether the specimens came from one site at Tiop, or from around the village area. As the sherds are from the surface, it is impossible to make comparisons of design elements on a relative frequency basis by depth or by chronological association.

Of the 75 sherds in the collection all but one are decorated. This would seem to indicate that it is not a random sample, and that a special effort was made to collect only decorated sherds.

Pottery we have seen from New Caledonia, Fiji, and New Guinea is decorated only around the upper part of the vessel. As only one plain sherd was collected, there is no way of telling from this collection if this is also the case on Bougainville.

Variation in surface colour of the sherds (red to black), indicates that the ware was fired in a poorly controlled atmosphere, at a low temperature, thus producing a relatively low grade of pottery. The sherds are coarse-textured and crumble or shatter readily. No firing clouds are apparent, although there is considerable variation of colour even on individual sherds. No carbon streaks were noted. A description of the temper was not attempted, as it is a surface collection with no known provenance.

While the sherds are too small to indicate the size of the vessels, the curvature of the rim sherds, and other specimens suggest that they all represent fragments of bowls.

Method of construction. Anvil depressions on some sherds indicate that some vessels were made by the paddle and anvil method. All sherds show smoothing on both exterior and interior. One sherd showed that its vessel had been made by coiling, as the joint where the coils were pinched together was not entirely obliterated. There is a wide variation in the thickness of the vessel walls, ranging from 5 mm to 15 mm. The methods of construction of the pottery are similar to coiling with paddle and anvil as reported from New Caledonia and Fiji (Gifford and Shutler 1956: 70).

Decorated sherds. The decorated sherds are illustrated in Plates I, II, III. There are no painted sherds, nor any sherds with a slip (wash); no base, handle, or spout sherds, or sherds with suspension holes, appear in the collection. No evidence of resin was seen on any of the specimens. All decorative techniques are rather crude. Incising, gashes, gouges, or combinations of these are seen. While no detailed comparisons

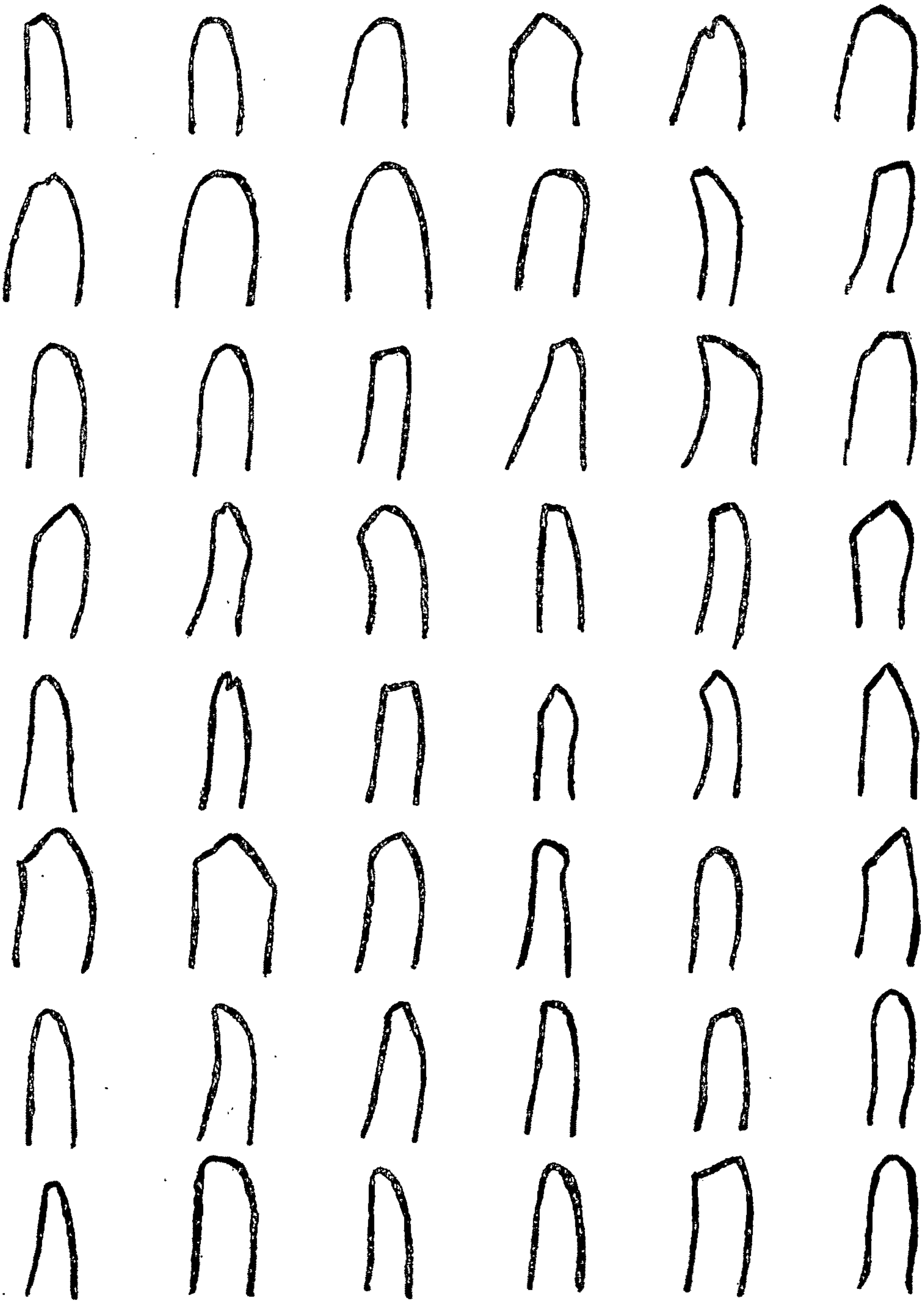
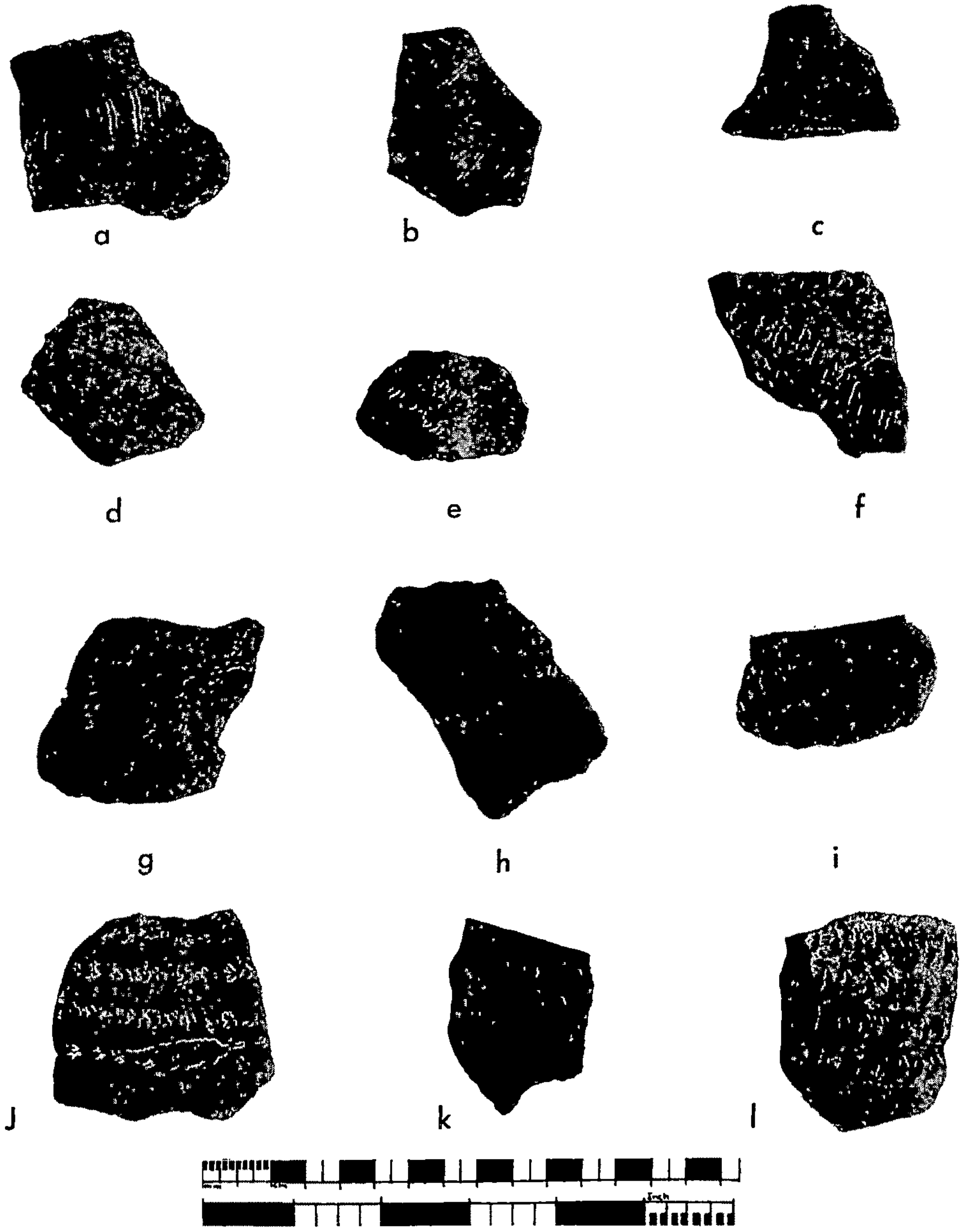
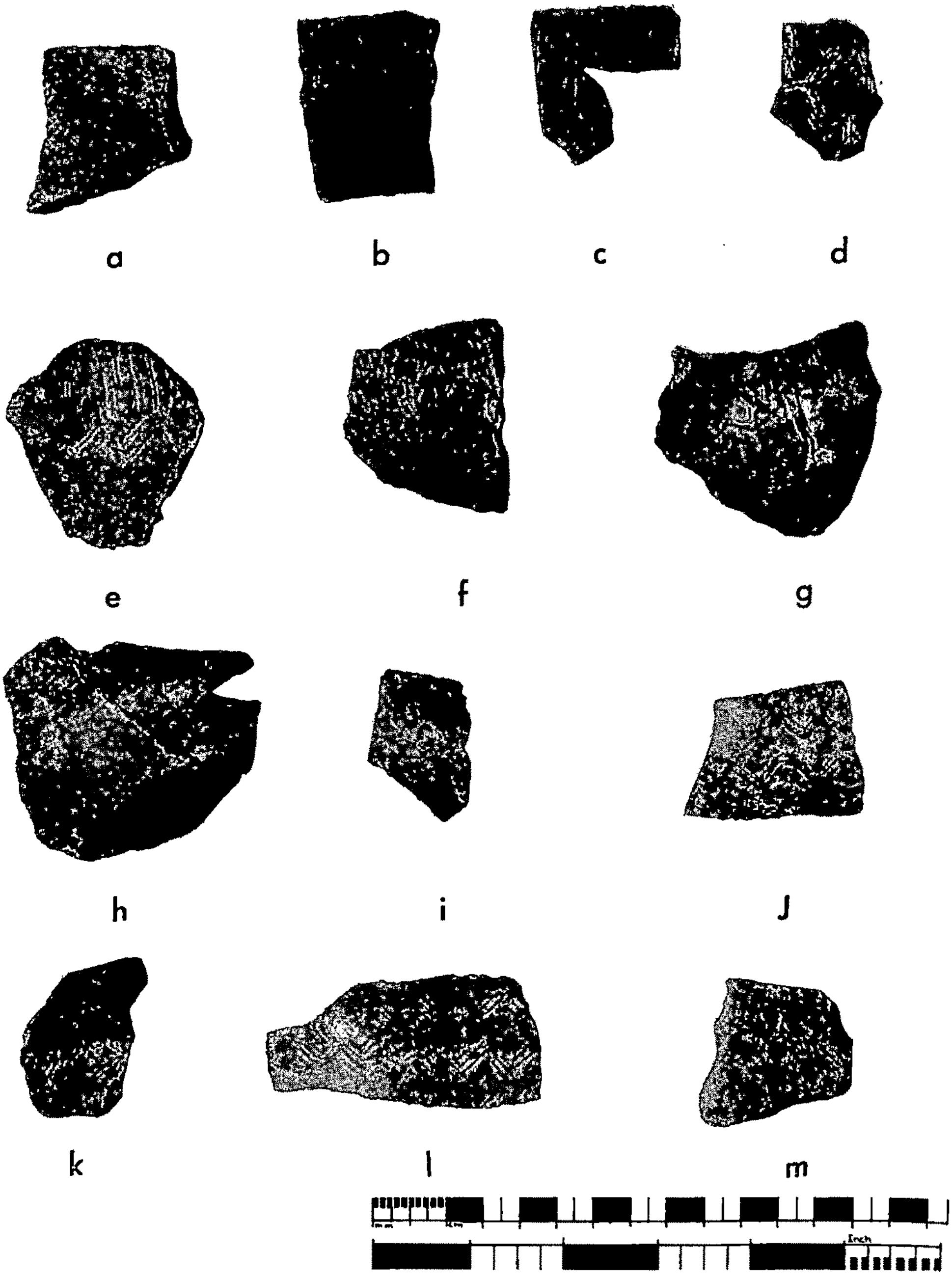


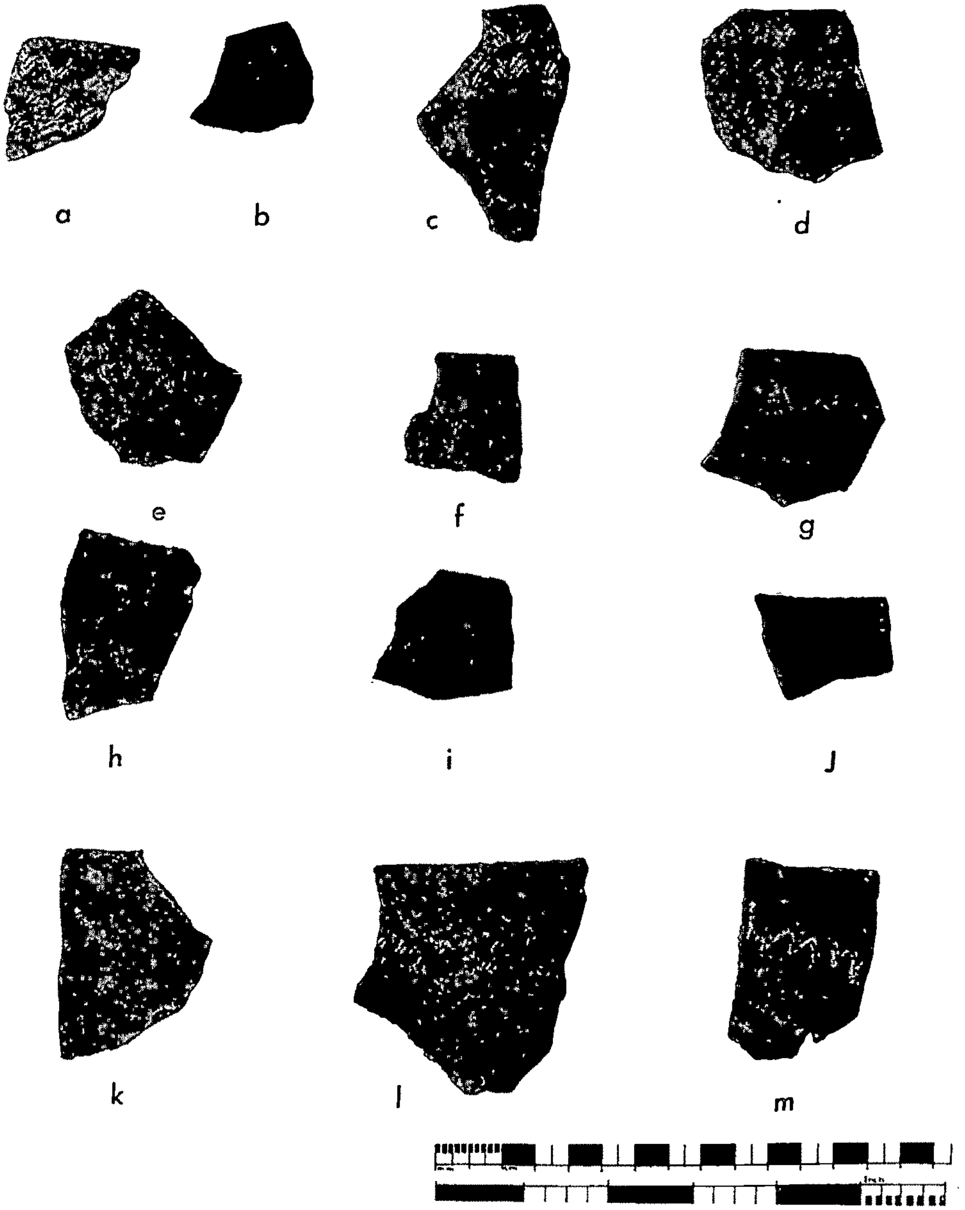
FIG. 1. Bougainville rim and lip types. Outside of vessel to the right.



Potsherds from Bougainville Island.



Potsherds from Bougainville Island.



Potsherds from Bougainville Island.

of areal design elements will be attempted here, the close resemblance of the Bougainville decorated sherd designs to those from Fiji (Gifford 1951: pls 21, 22), and New Caledonia (Gifford and Shutler 1956: pls 13, 14, 15) can be noted. The decorative incisions, gashes and gouges seem to have been made by twigs, straws and the edges of shells, as described by Avias (1950: 115).

No relief sherds are present in the collection. This may be due to the surface provenance of the specimens. No relief sherds were recovered in the upper levels in Fiji or New Caledonia.

Rim and lip types. Forty of the specimens are rim sherds, see Figure 1. Following our New Caledonia rim typology (Gifford and Shutler 1956: 71, fig. 4), straight, outcurved, and incurved types are noted. Thickness of the rims varies from being thinner or thicker than the vessel walls, or of the same thickness. Lip types, again using our New Caledonia typology (*ibid.* 71, fig. 4), Figure 1, shows round-grooved, flat, inside bevels, outside bevels, and double-bevelled specimens.

While this small sherd collection does not provide any chronological framework for pottery on Bougainville, it does extend our knowledge of the geographical distribution of the rather simple elements of Melanesian pottery design further to the west.

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8

Preliminary Report on Pottery Finds in Tonga

JENS POULSEN

During the period September 1963 to September 1964 archæological field work was carried out in Tonga for the Australian National University. The investigations have been limited to Tongatapu, the main island of Tonga. Attention was concentrated upon excavation because there is no lack of known rich sites. A team of local Tongan workers under the leadership of an excellent Tongan interpreter and excavation assistant was a considerable help to the expedition.

The establishment of an archæological relative chronology has never been attempted for any period of the prehistory of Tonga. This is the main purpose of the investigations in progress, as a relative chronology must form the basis for all other efficient and successful archæological investigations within the area. From this point of view it appeared that it would be best to concentrate upon the excavation of a selected few of the many habitation sites producing pottery.

Tongan Pottery

The first finds of prehistoric pottery were made in Tonga by W. C. McKern during his stay 1920-21; and this was also the first time that prehistoric pottery was recognized in Polynesia (McKern 1929: 115–119). One of his observations was that pottery must have been in common use during the time when it was known (1929: 111 and 117). This impression was confirmed by later investigations in Tonga, carried out by J. Golson in 1957, by T. L. Birks in 1959 (Golson 1961: 172–174), and not the least by the investigations going on at present. Pottery can be found at numerous locations all over the island, present in abundance both on the surface and in the cultural deposits below the surface. Potsherds form the dominant artifact group on our excavation sites.

The potsherds seem to reflect a marked range of pot shapes with curved as well as angular profiles and with both flat and rounded bottoms. Pot sizes seem to have involved both very small pots and very large pots, varying in diameter from about 7 cm to 40 cm at least—a few being considerably bigger—including both very shallow dishes and deep bowls. Generally speaking the pottery is brick red in colour. On some sherds other colours can be observed, such as dark brown, dark grey and black, but they seem only to reflect the firing technique used in making the pottery. A whitish layer on top of the brick-red clay has been observed on the outside of a few sherds. This might turn out to be traces of paint.

On our sites the proportion of decorated sherds to undecorated sherds is not very great, but still it can be maintained that decorated pottery was not uncommon. This differs somewhat from the conclusions reached by the earlier investigators at other sites where only a very small proportion of the pottery is reported as decorated (McKern 1929: 116; and Golson 1961: 174).

The pottery ornamentation is geometrical, including a remarkable range of patterns (see Figs. 1–23). The most common technique was that of making toothed stick impressions in the wet clay. Incising and impressing with the edge of a shell, were seldom used. In a few cases both these were used together with toothed stick patterns on the same pot. Rather common is a relief decoration of one or two horizontal ribs, often very strong and provided with vertical incisions.

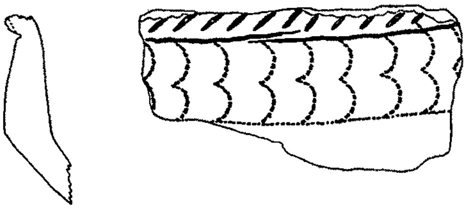
Toothed stamp or toothed stick technique are not very convenient terms, but they are both more precise than the terms 'incised' and 'rouletted'. The term 'incised' should be limited to a motif made by pressing, for example, a pointed tool into the clay and drawing it along the surface. The term 'roulette' should be limited to a motif made by rolling a wheel with toothed edge along the surface. This will produce a sort of a stippled line. The only difference between 'roulette' technique and 'toothed stick' technique is that the first involves the use of no less than a wheel, whereas the second only demands the straight or slightly curved edge of a stick of wood or bone. So the term 'rouletted' should be limited to cases where it can be definitely proved that the tool used was a wheel. [Toothed stamp in Southeast Asia has also been called *Impressed: compound tool* (dentate stamped). In the same way the use of a roulette is called *Impressed: compound tool* (roulette stamped). Solheim 1964: 9.—*Ed.*]

What strikes one first about the decorated potsherds is that many of the motifs have parallels among the sherds from Site 13 Lapita, in New Caledonia (Gifford and Shutler 1956: pls. 16, 22, and 23). This is also true for the material from excavations in the Ile des Pins, in New Caledonia (Golson 1959: 37, and more recent work by Golson at St. Maurice, Golson 1961: 174) and in older collections from Vuatom, New Britain (Golson 1959: 37; some Vuatom sherds are in the Musée de l'Homme, Paris, and were examined there by the writer).

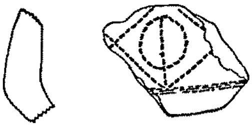
Gifford seems to have been the first to make comparisons between potsherds with related ornamentation from New Britain, New Caledonia, Fiji, and Tonga (1951: 236; also Gifford and Shutler 1956: 94). Golson, who followed, stressed the importance of these observations (1959: 36–38). The investigations going on at present cannot leave any doubt as to the similarities between the decorated pottery finds in Tonga and in these other islands. However, it should be remembered that the motifs are more numerous, elaborate and varied in New Britain and New Caledonia than they are in Tonga, where the style seems to have reached a typologically later stage than that further west. But it is beyond doubt that the same cultural movements account for the spread of this pottery complex from the west to the east in Oceania.

Other prehistoric pottery styles known from New Caledonia and Fiji through the work of Gifford and Shutler do not seem to be represented in the material being excavated at present. One potsherd collected from the surface at Maka'unga, Tonga, is probably an exception, having parallels both in Fiji and New Caledonia (cf. our Fig. 23 with Gifford 1951: pl. 21, and Gifford and Shutler 1956: pl. 14).

A local feature of Tongan pottery seems to be the combination of toothed stick-impressed decoration with the rather common rib decoration.



To. 1: Fig. 1



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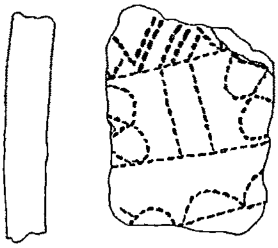

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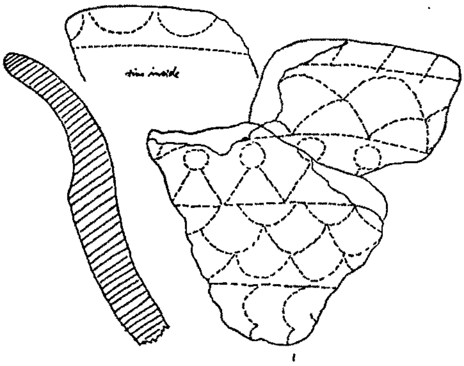
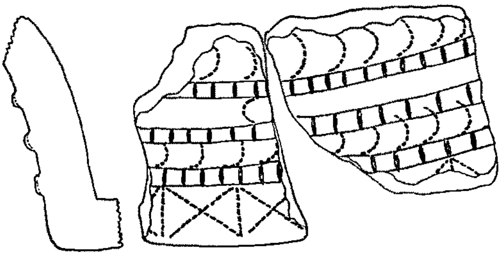


To. 1: Fig. 5



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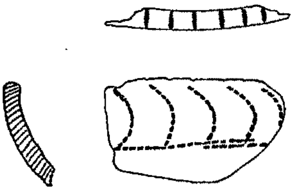
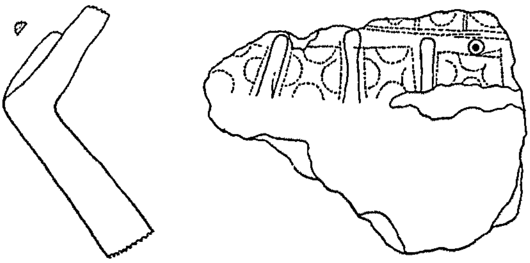
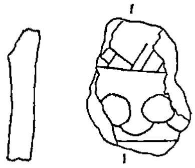


To. 1: Fig. 6

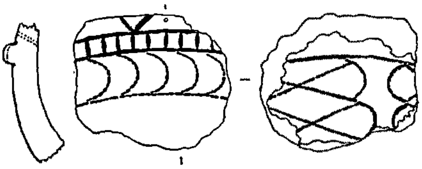
FIGS. 1–6. Potsherds from Pea Site, Tongatapu.



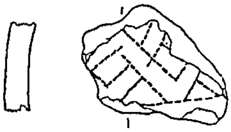
To. 2: Fig. 7



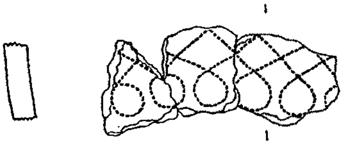
To. 1: Fig. 12



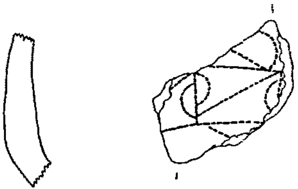
To. 1: Fig. 8



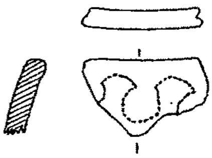
To. 1: Fig. 13



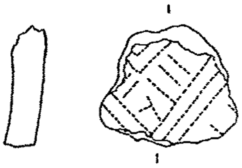
To. 1: Fig. 9



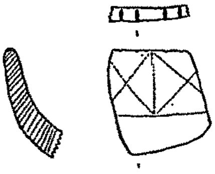
To. 1: Fig. 14



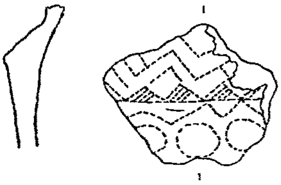
To. 1: Fig. 10



To. 2: Fig. 15

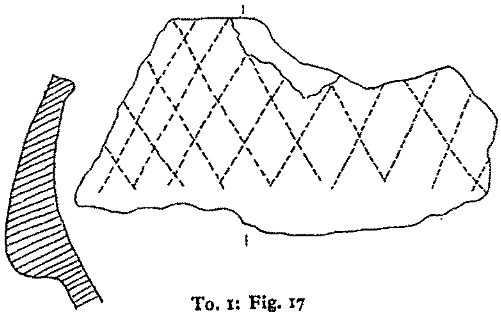


To. 1: Fig. 11

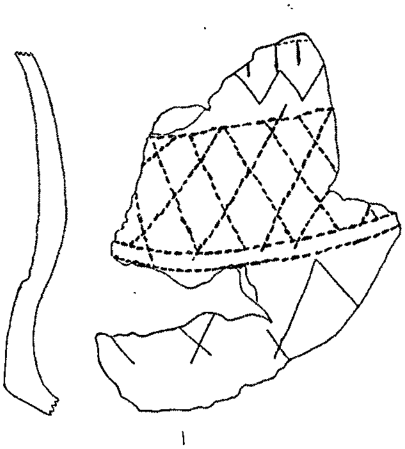


To. 1: Fig. 16

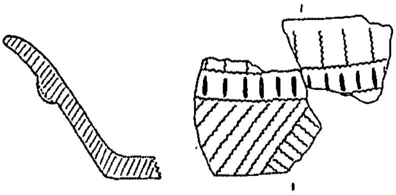
FIGS. 7–16. Potsherds from Pea Site, Tongatapu.



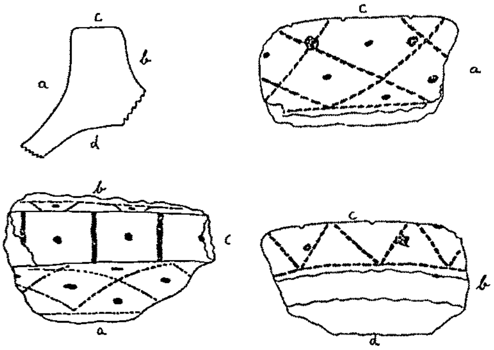
To. 1: Fig. 17



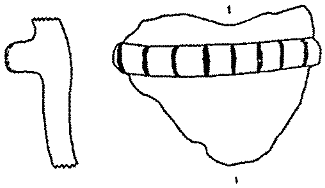
To. 2: Fig. 21



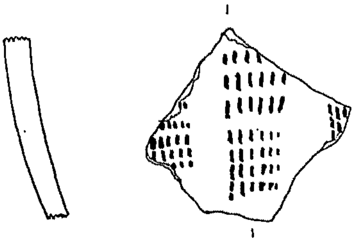
To. 1: Fig. 18



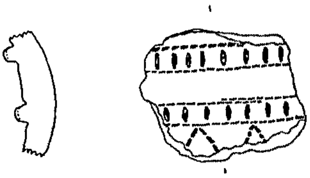
To. 1: Fig. 22



To. 1: Fig. 19

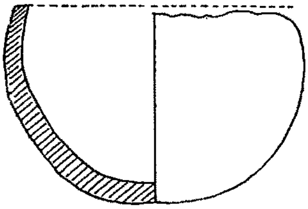


To. 1: Fig. 20

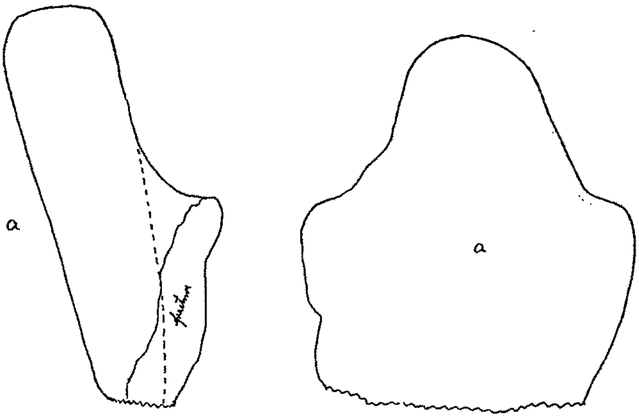


Maka'unga, Tonga: Fig. 23

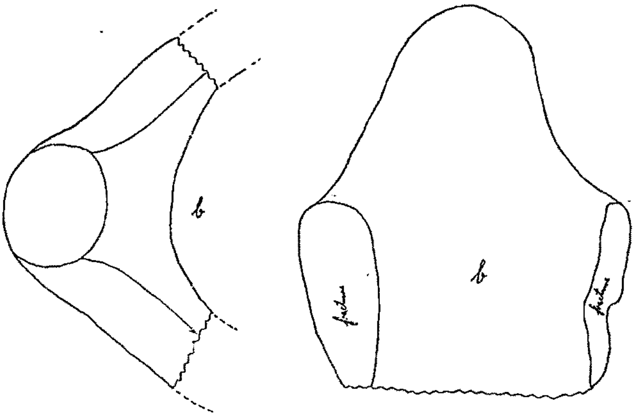
FIGS. 17–23. Potsherds from Pea Site, Tongatapu.



To. 1: Fig. 24

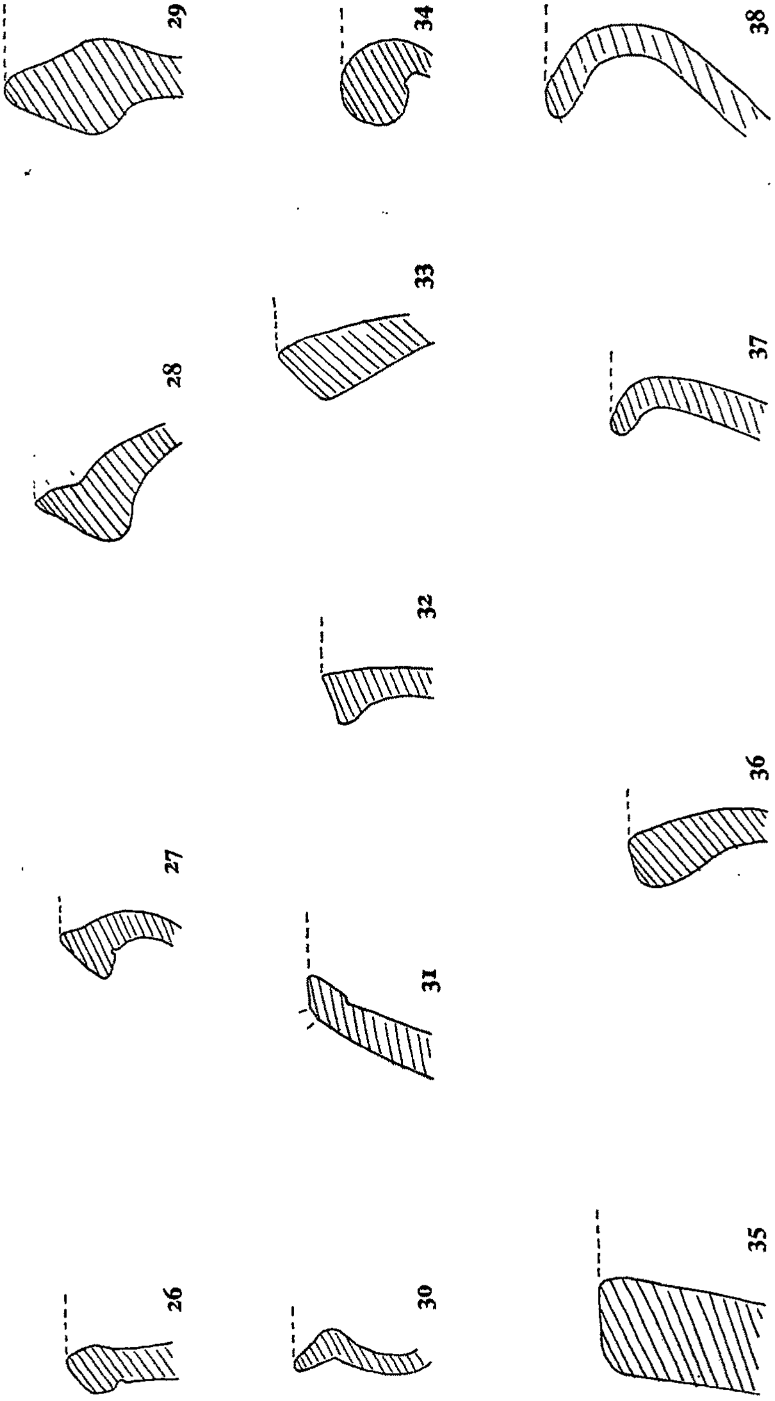


To. 1: Fig. 25a



To. 1: Fig. 25b

FIGS. 24–25. Potsherds from Pea Site, Tongatapu.



Figs. 26–38. Cross-sections of rim types from Tongatapu.

As regards rim and lip types of the pottery found to date, the rim forms include straight, outcurved, and incurved profiles. The lips are normally flat or rounded, and of the same width as the rim. No grooved lips have appeared (Figs. 5, 6, 10, 11, 17, 18, 24, 26–38).

McKern (1929: 116) mentions a doubtful type of ornamentation consisting of corrugations, placed laterally about the vessel and roughly parallel. We have a considerable number of such sherds which together form a distinct group. On some of these sherds the corrugations are very clear and look like leaf impressions.

The probable age of Tongan pottery can only be guessed at by comparing it with related pottery finds at Lapita in New Caledonia. C-14 dates for this are 846±350 B.C. and 481±400 B.C. (Gifford and Shutler 1956: 89). One charcoal sample from our first site has been sent to the Radio Carbon Dating Laboratory in Copenhagen. See *Postscript*, p. 195.

We still do not know how recently the pottery type concerned—and also pottery as a whole—was manufactured and used in Tonga. Was the industry active right up to the time when contact with Europeans began or did it die out before then, and if so, when?

Cook and other early discoverers observed clay pots in use in Tonga (McKern 1929: 117–18), but their opinions about their origin are conflicting. Some think that the pots were of local manufacture, others that they were imported. Mariner, who stayed quite a long time in Tonga, says that the earthen pots he saw in use were imported from Fiji (Martin 1817: Vol. II, 284). Fijian pottery has not yet been reported archæologically from Tonga. There is abundant raw material for pottery manufacture; plenty of clay is present at least in Tongatapu and also in the neighbouring Island of Eua. Up in the hills of Eua extensive areas of pure red clay are exposed, all probably of volcanic origin. Laboratory analyses will be carried out on samples of these clays as well as on potsherds and will no doubt give useful information on this point.

In many respects pottery finds in Tonga are of the utmost importance to the study of the prehistory of the island group. Pottery will no doubt provide the best basis for the study of the local relative chronology. Already we have hints about relative chronological differences from our first site, based on its 'horizontal' stratigraphy. Certain differences among other sites might also point in the same direction. If we can establish a relative chronology for some part of the prehistory of Tonga, it might eventually be possible to link this up with related pottery sequences further west in Oceania.

ASSOCIATED MATERIALS

The habitation sites from which pottery comes are all shell middens. Numerous post-holes and pits of various sizes and forms indicate that some sort of building activity must have taken place within the kitchen midden areas. Unfortunately there are so many holes that it is almost impossible to estimate the form of the huts, except for one case where the post-holes seem to belong to a rather big hut with curved sides. In one of the deep pits was a compact layer of red burnt soil and charcoal. A considerable part of this charcoal was of coconut shell and husk, showing that the coconut was known by the prehistoric kitchen midden dwellers in Tonga. This extraordinarily useful plant may have been introduced by the same people. We have preserved fragments of this coconut charcoal in case the variety of coconut can be identified. The writer would be most pleased to get in touch with a scientist who could assist in this respect.

Shellfish seem to have formed the basic animal food for the midden dwellers. The shell deposits are often very compact. Shell middens provide ideal conditions for the preservation of bones and artifacts made of bone, but these occur only very rarely in our shell middens. The amount of fish bones is very small indeed. This is surprising, for the fishing possibilities are excellent in Tonga, both in the lagoon and in the surrounding sea. The only fishing gear we have found is one simple fish gouge of bone. This is of the same size and form as one illustrated by Emory and Sinoto (1961: fig. 47*a*). Among the few animal bones identified are rat, turtle, and fowl. Fragments of human bones have been found scattered about in the shell midden. We have excavated a grave situated within the shell midden area of our Pea Site (To. 1.) The grave was dug into the subsoil and was well sealed by the shell deposits above. Various observations prove the grave to be contemporaneous with the formation of the shell midden. It is a shallow, circular pit about one metre in diameter. The skeleton was supine with the legs drawn up along the left side of the body, elbows close to the body, hands close to the shoulders, and the head oriented towards the east. Some of the soil under the skeleton was burned red. Four centimetres from the right elbow was a small shell adze (Fig. 40).

Another shell adze of the same type was found, together with others, and a number of fragments of basalt adzes. We have only one whole basalt adze (Fig. 39 *a–b*) which is contemporaneous with the pottery. This is the first time pottery has been securely associated with an adze in Tonga. The adze form is not related to the types previously supposed to belong to the Tongan pottery makers (Golson 1961: 174). The literature available in the field has not enabled us to find any parallels to our Pea adze, but a few somewhat similar forms have been noted from Fiji and New Caledonia (Gifford 1951: figs. 2*m*, 3*m*, 4*s*, *e*, and *k;* Gifford and Shutler 1956: fig. 1*c;* Duff 1956: fig. 36 bottom right). One of these (Gifford and Shutler 1956: fig. 1*c*) came from the surface of Site 13, Lapita, in New Caledonia. A closer study of these adze problems will no doubt open up interesting perspectives.

Shell artifacts are also associated with the pottery. These (Figs. 41–46) include fragments of bracelets, beads of various forms and four small, flat tattooing tools (for parallels in Hawaii see Emory and Sinoto 1961: fig. 70*a–b*). To these can be added two big, strong coral branch files and a few hammerstones of volcanic stone.

On the island of Tongatapu the number of earth mounds is exceedingly large—roughly estimated between 1,000 and 1,500—and many of them are enormous. Almost nothing is known about these mounds (the *langi* are not included in this connection). Are they house mounds or burial mounds or both, and are other categories of mounds included in their number? How old are they? What can they tell about the habitation pattern? It is obvious that some study should soon be made of them, not least because future agricultural development in Tonga may jeopardize

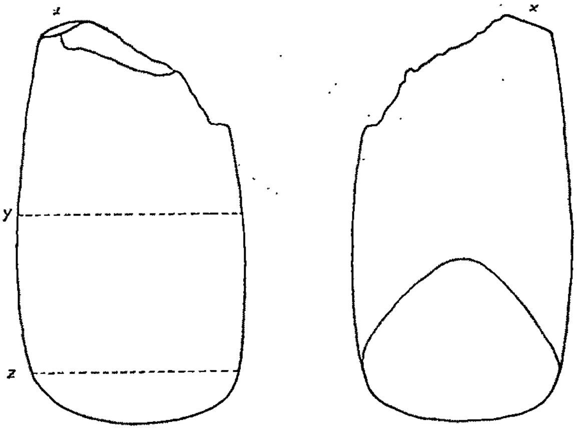


Fig. 39a X = undamaged part of butt end

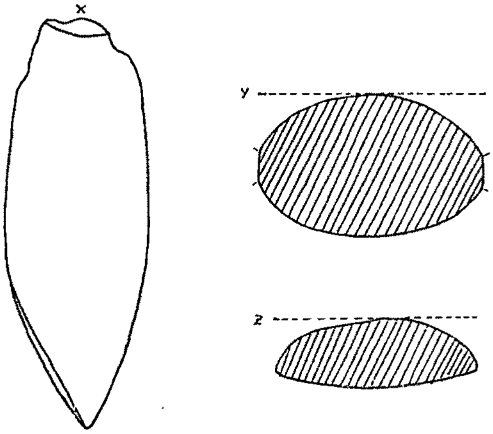


Fig. 39b

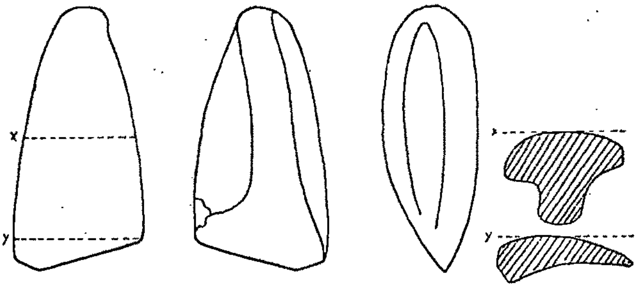
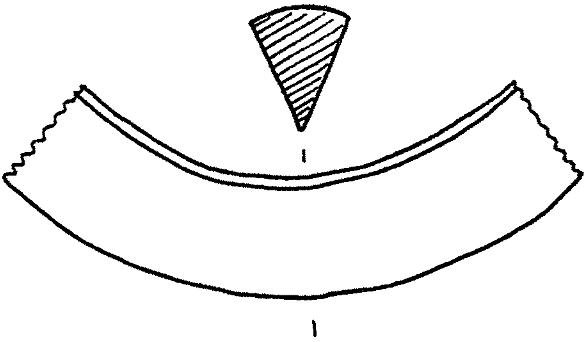
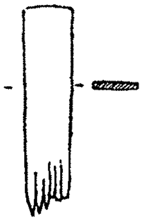


Fig. 40

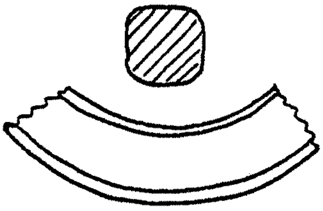
FIGS. 39–40. Stone adze and shell adze from Pea Site, Tongatapu.



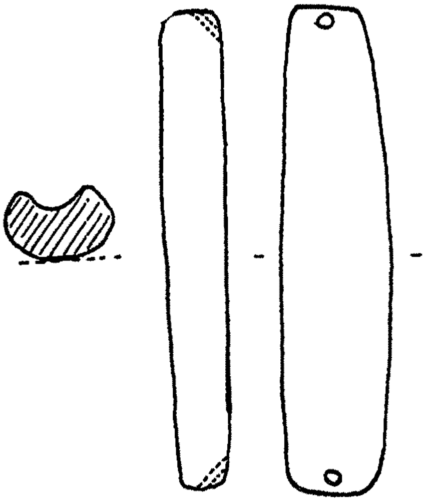
To. 2: Fig. 41



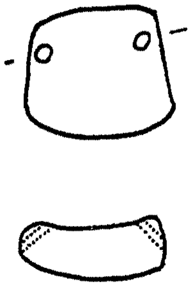
To. 1: Fig. 44



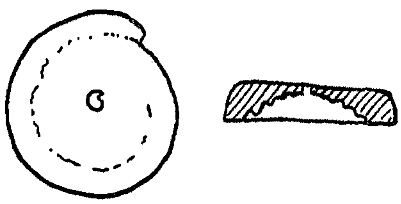
To. 1: Fig. 42



To. 1: Fig. 45



To. 1: Fig. 43



To. 1: Fig. 46

FIGS. 41–46. Shell artifacts recovered from Tongatapu.

the existence of many of them. I should like to note that the investigation of the the mounds is beyond the capabilities of a small team of field workers and will require a major expedition.

Postscript

Since the manuscript of this paper was submitted, a few radiocarbon dates have been obtained from the investigated shell-midden sites in Tongatapu. The samples were analysed by the Carbon-14 Dating Laboratory in Copenhagen (quoted as Copenhagen in the following) and by the Institute of Nuclear Sciences in New Zealand (quoted as New Zealand in the following). The radiocarbon dates have not yet been interpreted on the background of the archæological evidence from the sites. They will therefore only be listed as follows:

1. 820±100 B.C. Shell sample from site To. 1, Pea. (Copenhagen).
2. 430± 51 B.C. Charcoal sample from site To. 6, Tufu Mahina near Pea. (New Zealand).
3. 350±A.D. 60 Charcoal sample from site To. 2, Nukuleka. (New Zealand).
4. 350±A.D. 87 Charcoal sample from site To. 5, north of Atele College. (New Zealand).
5. 1,486±A.D. 82 Charcoal sample from site To. 1, Pea. (New Zealand).
6. 1,530±A.D. 100 Charcoal sample from site To. 1, Pea. (New Zealand).

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9

Further Relationships of the Sa-Huỳnh-Kalanay Pottery Tradition

WILHELM G. SOLHEIM II

The hypotheses of the Sa-huỳnh-Kalanay Pottery Tradition, of its origin, and its spread, are based on scattered data the interpretation of which is in some cases controversial. This pottery tradition was first hypothesized in a paper read at the Golden Jubilee Congress of the University of Hong Kong in September 1961 (Solheim 1961*d*; Solheim 1962*a*: 8). It was suggested in April 1963 that the people who made pottery of the Sa-huỳnh-Kalanay Pottery Tradition were speakers of Malayo-Polynesian languages; and the origin and spread of this pottery tradition was reconstructed in correlation with the origin and spread of some of the Malayo-Polynesian speakers (Solheim 1964*a*). This has all come about so recently that new evidence is often found, some of it supports the original hypothesis and some requires its modification. This paper presents a re-interpretation of some previously presented data together with new data from scattered areas. It should be read in conjunction with the two preceding reports by Harrisson (pp. 171–180) and Poulsen (pp. 184–195) which present new data, from Sabah and Tonga respectively, that are included in this discussion.

In my 1964 article 'Pottery and the Malayo-Polynesians', I was making use of pottery to hypothesize movements of people. In this paper I am concerned with the time and space relationships of the Sa-huỳnh-Kalanay Pottery Tradition and less with the movement of peoples. The Pottery Tradition is the problem, and whether its spread was closely correlated with the spread of a people or a culture, or is the result of some other form of diffusion, is not here a direct concern.

PHILIPPINES

A major correction must be made to the classification of archæological sites presented in *The Archæology of Central Philippines* (Solheim 1964*b*). Site C67, on Lagen Island, Bacuit Bay, Palawan, was previously classified with the Bau Pottery Complex sites. It should be re-classified with the Kalanay Pottery Complex sites. This is of much more importance to the hypothesis of the Bau complex than to that of the Kalanay complex as this was the only definite 'early' site classified as having Bau complex pottery (*ibid.* 150).

This pottery was classified in 1956. At that time it was believed that carved paddle decoration was found only with pottery of the Bau complex. As two of the vessels from Site C67 had carved or bound paddle impressions (Solheim 1964*b*: pl. 35*d–e*) the site was classified with the Bau complex sites, though it was noted that there was definite non-Bau pottery present and that there were indications of contact with the Kalanay pottery complex (*ibid.* 149). Examination of the closely related pottery from Niah Cave in Sarawak showed that carved and bound paddle decoration is found associated with the other elements of Kalanay-complex pottery (Solheim, Harrisson, and Wall 1961: 168–69). Given this information, there is no longer any reason to classify C67 as a Bau complex site; everything points towards its pottery belonging to the Kalanay Pottery Complex.

The artifacts associated with pottery in C67 are all shell; no metal was present so this could well be a neolithic site (*ibid.* 147). The shell beads and convex shell bracelet present are found in early Kalanay complex sites (*ibid.* 119). The convex form of shell bracelet is found in other Kalanay complex sites (*ibid.* 190), but the only Bau site where this is found besides C67 is C5 in Suragao, Mindanao (*ibid.* 139). This site (C5) had mixed with it pottery from Site C13, a Kalanay complex site (*ibid.* 135). C5 was also the only Bau site to have the rectangular type of shell bracelet (*ibid.* 150), so it is probable that these two types of bracelet (convex and rectangular) previously thought to come from C5, actually came from the Kalanay Site C13, with the pottery.

By changing Site C67 from the Bau group of sites to the Kalanay group, we remove the only early site from the Bau group. Major revision of the hypothesis presented is therefore required to explain the time and distribution of the Bau Pottery Complex in the Philippines. I will not attempt this here.

The change is less important to the hypothesized Kalanay Pottery Complex but it does give us more information about the early Kalanay sites. The absence of metal suggests that this could well be the earliest Kalanay site of those presented in *The Archæology of Central Philippines.* It adds *impressed: carved paddle* and possibly *impressed: bound paddle* to the inventory of early Kalanay pottery. The method of applying bound paddle impressions was not recognized when this report was written; but from the illustrations (*ibid.* pl. 35*d–e*) the impressed pattern could have resulted from the use of a bound paddle instead of a carved paddle.

Pottery from a number of the sites covered in the above report was not considered distinctive enough to classify. These sites were presented as 'Miscellaneous Sites' (*ibid.* 177–86). Nine of them were thought to show possible Kalanay relationship (*ibid.* 180–83). I would remove none from this group except to upgrade Sites C34 and C35 to definite Kalanay complex sites. The vessel from Site C34 (*ibid.* pl. 43*b*) was not given full Kalanay classification at the time because of carved paddle impressions on the body. This is no longer a deterrent factor. The two vessels from Site C35 (*ibid.* pl. 43*e–f*) were not considered sufficiently distinctive to be classified definitely. Since the writing of that report my views have changed. The form of the thick small pot illustrated in plate 43*e* is similar to that of a number of pots from Site B23 (*ibid.* pl. 14*f–g*), a Kalanay complex site; its incising would place it with the Kalanay complex rather than the Bau complex. The form of the other vessel (*ibid.* pl. 43*f*) is generally similar to a vessel from the Kalanay Cave site (*ibid.* fig. 17*a*). The vertical notches on the flange, and the flange itself (*ibid.* 180) are typical elements of Kalanay Complex Pottery (*ibid.* 13; and Solheim 1961*a*: 183).

Several other sites reported in the Philippines show some relationship to Kalanay complex sites. Two are burial jar sites. Elsewhere in the Philippines (Fox and Evangelista 1957: 63; Evangelista 1964: 55) and at Sa-huỳnh in Annam (Janse 1961) the Sa-huỳnh-Kalanay pottery has been found associated with burial jars.

The first of these is the Makabog burial-jar site in Masbate (Solheim 1954). Subjectively, this site does not seem to me to be a typical Kalanay, yet there are a number of elements of decoration and form that are typical of Kalanay Complex Pottery. These elements include: angle jars, perforated ring bases, horizontal fluting, and considerable variation in rim form (*ibid.* pls. 2–10). Incised decoration was present on several vessels and sherds. The design in plate 5 no. 10 is similar to Kalanay design Ia (Solheim 1964*b*: 14); in plate 6 no. 11 and plate 10 upper vessel, it is a modification of the 'one' series of Kalanay patterns; in plate 6 no. 9*a* and plate 9 no. 4 there is a combination of Kalanay patterns I *f*, and other 'one' series patterns. Only one pattern and method of decoration from this site is not known as Kalanay Complex Pottery; this is the use of appliqué vertical ribs above the angle of the jar seen in plate 3 no. 7.

Appliqué decoration has not previously been found on pottery definitely associated with that of the Kalanay Complex or the Sa-huỳnh-Kalanay Tradition, with two minor exceptions. Three unusual vessels from South Sumatra that included numerous elements of Sa-huỳnh-Kalanay incised decoration also had an appliqué decoration (Solheim 1961*a*: 184–85 and pls 2 and 3). Several sherds from Samrong Sen in Cambodia appear to have an appliqué decoration (Mansuy 1902: pl. IV). Unfortunately the artifacts from this site are not known to be closely associated and may represent more than one culture. It was not proposed that the method of decoration was a part of Sa-huỳnh-Kalanay pottery decoration. Appliqué decoration should perhaps be included as a Sa-huỳnh-Kalanay method of decoration, but there is not sufficient evidence as yet to say so.

The appliqué style found on the vessel from the Makabog burial-jar site is not unique in the Philippines. Numerous vessels and sherds with this style of decoration are found in Philippine collections from the Visayan Islands, but none of this material has been published. In general it appears that the other pottery with this decoration belongs to a slightly later period than that of the distinctive Kalanay complex.

The second site is at San Narciso, Tayabas (Solheim 1951; Solheim 1961*a*: 131–135). This is a burial-jar site (actually two neighbouring sites) which have not been fully reported, and will probably remain so until further excavation is undertaken. There is less direct evidence relating the pottery here to Kalanay pottery than there was at the Makabog site. Forms vary considerably, and include perforated ring stands and angle jars (Solheim 1961*a*: pl. 9). Several jars (including one of the large burial jars) were red slipped, some were polished, and some incising was noted (Solheim 1961*a*: 134–35). The incised patterns were not of the distinctive Kalanay patterns but they would not be out of place with Kalanay Complex Pottery (Solheim 1961*a*: 134 and pl. 9*e*; Solheim 1951: fig. 7). One sherd includes a portion of a triangular cut-out (Solheim 1951: fig. 7). The one element of pottery form found here and not previously associated with Kalanay complex pottery is a spout (Solheim 1961*a*: 134–35 and pl. 9*a*). For the moment there is no reason to add this to the complex.

These two burial-jar sites may or may not be closely related to those with the Kalanay Complex Pottery. One is in, and the other very close to, the known area of distribution of Kalanay sites and appears to be contemporaneous with them. The relationships of these two sites had best be left undecided until further work has been done in the area.

A group of sites with pottery definitely related to the Kalanay complex is in Batungan, Masbate (Solheim 1961*b*: 159–62 and pl. I). Reports on them should be available soon. In the meantime, it is of value to include some discussion about them since one of them has the only C-14 date from a Philippine neolithic site.

Most of the sherds from the sites (Solheim 1961*b*: pl. I) are easily identifiable as belonging to the Kalanay Pottery Complex. There is one, however, that does not look so familiar. This has small impressed circles included in a somewhat complex pattern (*ibid.* pl. I*b*). Several sherds are known with impressed circles, from this and other published Kalanay sites (*ibid.* pls I*c* and *m*, II*d*, III*k–l*; and Solheim 1964*b*: 55 and pl. 26*p*). Small impressed circles are present on some of the Kalanay pottery now being recovered from the Palawan caves. A red-slipped bowl with ring stand from one of these caves is on display in the National Museum in Manila (Pl. I*a*). It has impressed circles on both the bowl and foot rim; the pattern in which the circles are used is very similar to that inside one of the rims from Batungan (Solheim 1961*b*: pl. I*i*). Another rim from Batungan with a variant pattern is similar in form to the decorated Palawan rims, where the decoration is on the outer surface, as on the Palawan bowl (Solheim 1961*b*: pl. I*h*). Impressed circles are also commonly found with Sa-huỷnh-Kalanay pottery in Sarawak (Solheim, Harrisson, and Wall 1961: fig. 2*a* and *f*, fig. 3*b*, fig. 4*b* and *d*, pl. IV*b–c* and *e*, pl. VI*c*, and pl. VII*b–c*) and Celebes (Solheim 1961*a*: pl. I*j*). The pattern on the sherd in question, where the impressed circles are used in a complex curvilinear design, is somewhat similar to the pattern on one of the sherds illustrated from Marinduque (Solheim 1961*b*: pl. III*l*) but it is even more like a sherd illustrated from Phu-C'u, Quang-ngai, Annam (Janse 1961: pl. IV*c*). Although we know of only two or three sherds showing this use of impressed circles, their association with other pottery of the Sa-huỷnh-Kalanay tradition makes it logical to consider this as a decorative form belonging to the tradition.

Before leaving the Philippines further mention should be made of the pottery coming from the excavations in Palawan. The National Museum is running intensive excavation of many caves in the area of Lipuun Point on the west coast of Palawan (Evangelista 1964). Dr Robert Fox, Head of the Department of Anthropology of the National Museum, is in charge of the excavation. Cord-marking is common, sometimes covering the total surface of spherical pots, sometimes decorating the lower part of a bowl with an angle between the side and the bottom. Many burial jars have angular tops, generally similar to lids on burial jars at Sa-huỷnh (Janse 1961: fig. 1 and pl. 11*a*). Pottery boxes like those from Marinduque (Solheim 1961*b*: pl. V*b*) have been found. Several of the distinct Kalanay-complex incised patterns are present. A unique pottery lid was found in 1964 with a painted decoration in red, outlined by incised lines, of several curvilinear elements looking like an open P (ℙ). On the top of the lid are two seated human figures in a small boat, one in front with arms crossed over the chest, the other in the rear holding a paddle near the end with both hands, as if steering the boat. The red-slipped bowl with ring stand mentioned above is from Ngipet Duldug Cave on Lipuun Point. Associated with it were a small stepped adze, a scoop made from the *Melo* shell, small green-stone beads, and a few beads made of the common *Nassarius* shell. According to the sign on the Museum case the assemblage has been ' . . .

tentatively assigned to the Late Neolithic, the earliest appearance of the jar-burial complex in Palawan'.

THAILAND

Final reports have not yet arrived from the Thai-Danish Prehistoric Expedition of 1961–62 but many preliminary reports have appeared (Horr 1963: 12–15 and 7–9). I have suggested that the neolithic pottery excavated in Kanchanaburi by the expedition belongs to the Sa-huỳnh-Kalanay Pottery Tradition and Per Soerensen has questioned this (Solheim 1964*a;* and Soerensen 1964). It will not be possible to decide this question until the final reports are published, and even then there may not be sufficient evidence, for the neolithic pottery of Kanchanaburi may be 1,000 years older than the oldest dated pottery of the Sa-huỳnh-Kalanay tradition. Obviously, this gap must be filled before we can be sure that the Kanchanaburi pottery belongs in the Sa-huỳnh-Kalanay tradition.

Before leaving the Kanchanaburi pottery, I would like to remark on its decoration. Other than the common cord-marking, decoration is apparently extremely rare. Descriptions of only two incised vessels have been published, one from Sai Yok (Boeles 1963: photo 15) and the other from Ban Kao (Solheim; n.d. *a*). The pattern on both of these vessels is the same as that of Kalanay pottery decoration IV*c* (Solheim 1964*b*: 14 fig. 2).

In February 1964 I noticed nine interesting earthenware vessels on display in the National Museum in Bangkok. Little information was available about them. They were received as a gift probably shortly before 1936, and came from a cave at Koˀ Din, Koˀ Samui, Suratthani Province. This is on the island of Samui in the Gulf of Siam, about 75 kilometres east-north-east of the town of Suratthani. No associated material is known.

There is some variation in the paste of these vessels but, on visual analysis, they seem to be all of the same clay. Parts of their surfaces were treated with a black substance which effectively conceals most of the breaks in the paste. Surface and body colour varies from tan to black with some fire clouds on the surface, and in at least one case a tan surface shaded to black in the centre of the wall. Some vessels show fine sand in the paste; in others there are numerous very small holes, indicating the presence of organic material in the clay before firing.

Eight of the vessels were decorated and one was plain. This was a small bowl with a rim diameter of 10·9 cm, maximum diameter 14·5 cm, and height 7·0 cm (Pl. I*b*).

Two of the vessels were angle pots, one slightly smaller than the other, with very similar decoration on both. The larger had a rim diameter of 15·0 cm, a maximum diameter of 19·1 cm, and height of 11·4 cm, while the smaller one was 14·9 cm, 16·7 cm and 9·5 cm for the same measurements. The larger one (Fig. 1*a*) has a variant of Kalanay pattern I*a* in a band below the neck, and pattern XI*b* (Solheim 1964*b*: fig. 2) at the angle on Kalanay vessel form III*c* (Solheim 1964*b*: fig. 3). The incising was done with a two-pronged tool. The diagonals were probably made by holding the pot sideways, sticking the prongs into the clay at the bottom, then drawing them up and to the left. Usually, two punctations are evident at the bottom of each pair of lines, which are not as deep as the punctations. Some of the diagonals

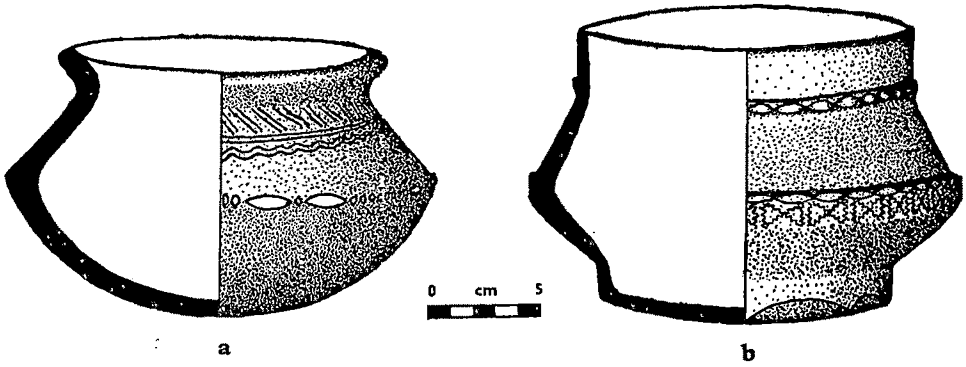

FIG. 1. Two angle vessels from Samui Island, Suratthani Province, Thailand.

run into the angle of the neck. Below them is a pair of parallel straight lines, then a pair of parallel wavy lines. Around the angle are lenticular surfaces in pairs with a notch cut between the two, and 12 to 15 notches between pairs. The surface of the pot was well smoothed but not polished. The second pot differs in that there is a pair of straight lines above the diagonals, just below the neck, as well as below; and just below the pair of wavy lines are vertical pairs of punctations or dashes as in Kalanay pattern 1*b* (Solheim 1964*b*: fig. 2). At the angle in one area there are seven lenticular cut surfaces in a row, with eight vertical, simple tool impressions between them and the next set of lenticular surfaces. Most of the decoration on the angle has weathered off.

The vessel in Figure 1*b* has a slightly rounded base. It has lenticular cut surfaces around the vessel at the angle between the base and the wall, at the upper edge of the flange, and on the narrow flange at the angle between the neck and side. On the vertical flat surface of the flange, at the angle, is an impressed decoration similar to Kalanay Complex Pattern 5 but made with the crenelate edge of a bivalve similar to Kalanay pattern 10 (Solheim 1964*b*: fig. 2).

The fifth vessel is a shallow bowl (Kalanay form 5*b*, Solheim 1964*b*: fig. 3) with incised, impressed, and carved decoration (Fig. 2*a*). At the angle between side and bottom are four sets of three and one set of four lenticular cut surfaces with from seven to twelve vertical simple tool impressions between sets. Two pairs of parallel incised lines border two bands of crennelate impressions.

The smallest vessel is an angle jar with a high neck. It is carved, incised, and painted (Fig. 2*b*). There are lenticular cut surfaces at the angle and at the edge of the small flat base. The incised decoration on the shoulder outlines the painted pattern, which is similar to Kalanay decoration 3*a* (Solheim 1964*b*: fig. 2). The original surface of the jar is a grey-brown. Two colours were apparently used to bring out the rectangular scroll design. One is a very faint reddish-brown. The other colour is completely gone, but the residue has a texture different from both those of the reddish-brown surface and of the original surface.

There are two quite similar shallow bowls with ring stand, of Kalanay form 7*c* (Solheim 1964*b*: fig. 3). In both cases the stand was applied to the bottom of the shallow bowl. Both are carved and impressed in variants of Kalanay pattern 10

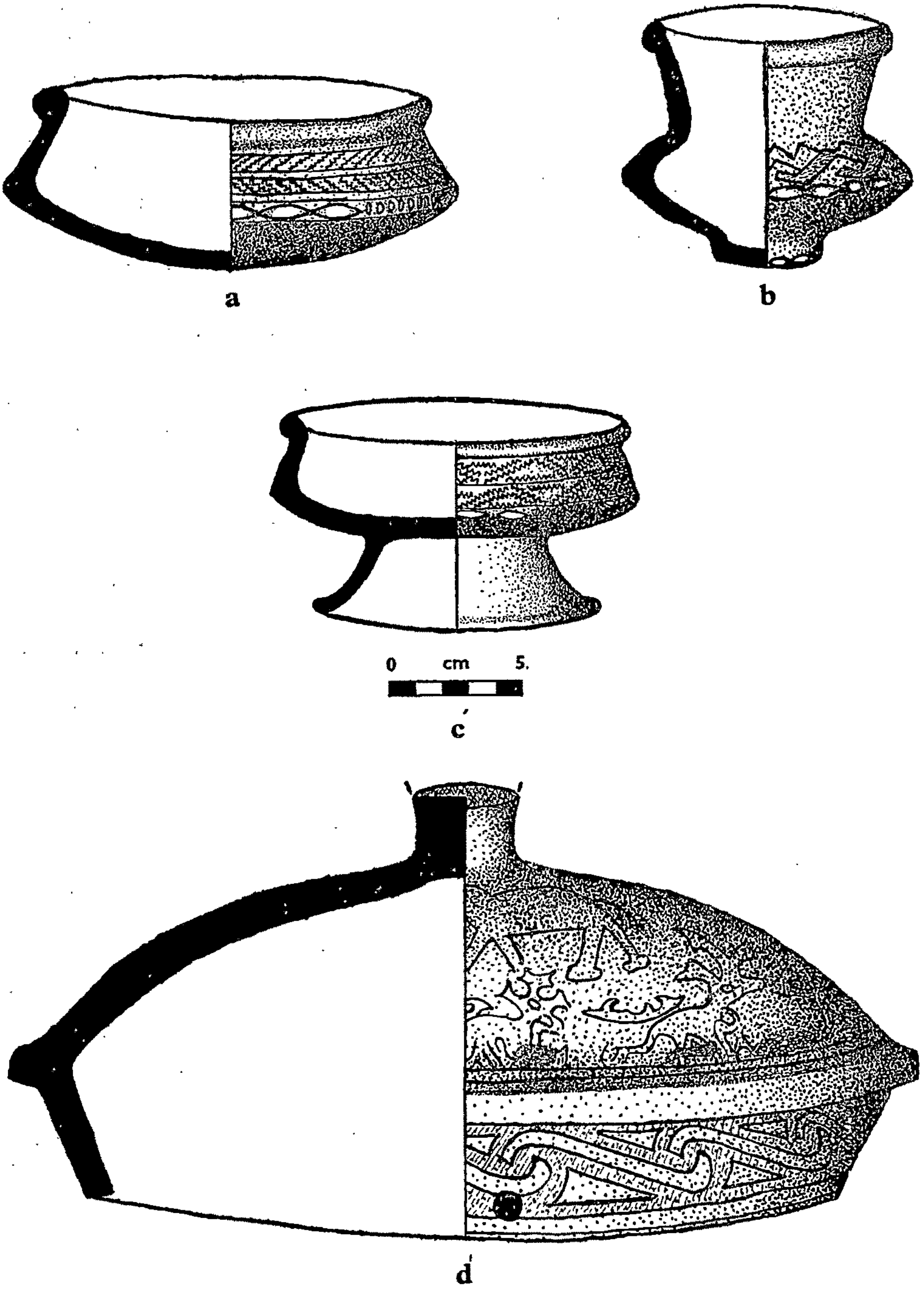

FIG. 2. Four earthenware vessels from Samui Island, Thailand. See Plate I*c*

(Solheim 1964*b*: fig. 2). The smaller bowl (Pl. I*c* and Fig. 2*c*) has lenticular cut surfaces at the angle. These were smoothed possibly with a finger. Between pairs of these surfaces are simple diagonal tool impressions, made with the side of a cylindrical tool, as were the simple tool impressions on other vessels of this group. A shallow impressed line roughly divides the side of the bowl above the angle into two horizontal halves, in each of which was impressed a crenelate design. A line was then impressed just above the decoration, at the angle. The surface was well smoothed but there are no indications of polishing. The larger bowl (Pl. II*a*) is more than half again as large as the smaller one. Their dimensions are: bowl rim diameter 23·2 and 13·0 cm, base rim diameter 17·2 and 10·6 cm, and total height 9·6 and 6·7 cm. The decoration at the angle is exactly the same as on the smaller bowl, but the side above the angle is divided into three horizontal panels by three shallow impressed lines. The side of the bowl is badly weathered, but traces of the crenelate impressed pattern in each band seem the same as on the smaller bowl. Rectangular holes were cut on opposite sides of the base, one is 13 by 10 mm and the other 14 by 10 mm. These were 13 to 15 mm above the base rim. On this bowl the ring foot had been applied slightly off-centre.

The most striking piece is a large lid of Kalanay form 7*a* (Solheim 1964*b*: fig. 3), with the addition of a handle the top of which was broken off (Pl. II*b*). There is an indistinct incised decoration on top of the lid, and incised decoration on the outside of the rim below the flange looks like Kalanay pattern 2 and 2*a* (Solheim 1964*b*: fig. 2), with interlocking scroll and triangles (Pl. II*c* and Fig. 2*d*). A faint red paint, probably clay slip, emphasizes the scrolls, and possibly the triangles. Three holes, cutting three equal arcs in the circumference of the rim, were drilled through the rim after firing. They are 6 to 10 mm in diameter. On the inside of the lid, opposite the handle, there is a slight depression and a small crack. This suggests that while the clay was still plastic a finger or stick was pushed through, or well into, the lid from the inside, forming a nubbin on the outside. Either clay was added to this for the handle, or a formed handle was applied. More clay was then added inside to fill the hole. The incising on the top is very faint and, to add to the difficulty, parts of the surface have exfoliated. Someone had rubbed chalk over the surface in an attempt to bring out the decoration, but this only confused the traces. I made a rubbing of one of the figures, using soft pencil and paper, but this negative pattern was even more obscure. Then I carefully outlined the faint white pattern, referring to the lid where I could not make it out, and finally the figures emerged. The whole top of the lid was deciphered in this way, and the figures then reproduced as seen in Figure 3. The elephants on the inner circle are fairly obvious but the figures in the outer circle are not what a person meets everyday. Nothing like this has previously been connected with Sa-huỳnh-Kalanay pottery. Without attempting to document the relationship of these figures, I may mention their obvious connection with some present day tribes in Borneo. I hope that Tom Harrisson will follow up this question in a future issue of *Asian Perspectives*.

The vessels from this site in Suratthani Province could easily have come directly from the type site of the Kalanay Complex Pottery. Except for the incised figures on the top of the lid, all the decoration and most of the forms can be almost exactly duplicated in the pottery from Kalanay Cave. Even the workmanship is very much the same. There is no question that the pottery from this cave is closely related to the pottery from the Kalanay Cave site, but what of the incised figures on the lid? We must postpone a study of their possible connections until their relationships have been documented.

INDONESIA

Sa-huỳnh-Kalanay relationships with pottery from scattered areas in Indonesia have been reported before this (Solheim 1961*a*: 182–86). Archæologically, they include the site at Galumpang in Celebes, the Buni site in West Java, and others at Tjekik and Gilamanuk in West Bali (Soejono 1963: 35–36 and 40–41). Possible relationship has been suggested with burial-jar sites in Sumatra and East Sumba (Solheim 1961*a*: 186). One further burial-jar site should be added to this list; the one at Anjar, Java (van Heekeren 1956).

Published illustrations of pottery from the Anjar burial-jar site show a much closer relationship to Sa-huỳnh-Kalanay than is so far indicated for the other two sites mentioned above. Only three vessels from this site are illustrated (van Heekeren 1956: *a–c* facing p. 200). One *(c)* is a shallow bowl with high ring stand having a simple incised pattern on the foot rim. The form is generally similar to bowls from Sa-huỳnh-Kalanay sites and the decoration, while not distinctive, is not out of place (see Callenfels 1951: pl. XIV). Vessel *b* is an angle pot with a typical Sa-huỳnh-Kalanay incised decoration around the pot at the angle (see Solheim, Harrisson, and Wall 1961: fig. 4*g*; Solheim 1961*a*: pl. I*i*; and Callenfels 1951: pl. XVI top row centre). Vessel *a* is unique but combines typical elements of Sa-huỳnh-Kalanay form in its high narrow neck and conical body, which stands on a foot ring.

Potsherds from Galumpang in west central Celebes have been published in several articles (Callenfels 1951; Heekeren 1957: pl. 37–38; Solheim 1961*a*: pl. I*a–j*). Others in the Royal Tropical Institute in Amsterdam have not previously been published. Two sherds from this small collection are somewhat different from those previously illustrated. One of these (Pl. III*a*) has the common half-circle impression (Callenfels 1951: pl. XV; Heekeren 1957: pl. 38; Solheim 1961*a*: pl. I*i*) arranged to form a series of running scrolls. The second sherd (Pl. III*b*) has an incised pattern emphasized by punctations (see also Heekeren 1957: pl. 38; and Solheim 1961: pl. I*e* and *i*).

Many Kalanay-complex patterns, or modifications of them, can be found in the decoration of present day pottery. Two such vessels from Makassar and four from Sumatra have already been illustrated (Solheim 1961a: pl. I*k–l* and II–III). Other vessels that I have noted recently are as follows: from the Minangkabau District of Batang Hari in Sumatra, a pot with a variety of the series 'one' Kalanay pattern (Solheim 1964b: fig. 2) and the common notching on the rim (No. 12302 in the collections of the Djakarta Museum: pl. III*c*); from Gajoland in Sumatra, two angle pots, one (Pl. III*d*; No. 45/215) with a pattern similar to the series 'one' pattern and the other (Pl. III*e*; No. 45/219) with Kalanay pattern V done by the appliqué technique; from Lombok, a pot with variants of pattern IV*f* and notching on the rim (Pl. III*f*; No. 1330.251); from southern Celebes two vessels, one with a series 'one' pattern (Pl. III*g*; No. 668/152) and the other with a combination of a series 'one' and IV*f* patterns (Pl. III*h*; No. 668/154); from Kai a pot with a variant of the series 'one' pattern plus the IV*f* pattern above and notching on the rim (Pl. III*i*; No. A1043); and from Geelvink Bay in West Irian a bowl with deep incising in a band around the rim making a pattern similar to IV*c* (Pl. III*j*; No. 2003–159). The vessels in Plate III*d-i* are all from the Royal Tropical Institute in Amsterdam. Thanks are due to Dr J. van Baal who arranged for me to see the pottery and take these pictures.

I do not suggest that the presence of these Kalanay pottery patterns means that the people who used them are directly descended from prehistoric makers of Sa-huỳnh-Kalanay pottery, or that the pottery is directly related to the Sa-huỳnh-Kalanay Pottery Tradition. What I do suggest is that the scattering of these patterns through the length and breadth of Indonesia indicates that in prehistoric times the Sa-huỳnh-Kalanay pottery tradition also was scattered through the same total area, and that future archæological exploration and excavation will discover this pottery on all the major islands of Indonesia.

There will no doubt be more than one pottery complex distinguishable in this wide area. Two distinct ones may already be showing up in Malaysian Borneo. The Niah Complex is known in Sarawak (Solheim, Harrisson, and Wall 1961) and now it appears that a different complex may be found in Sabah (see Tom Harrisson's article on Sabah, pp. 171–180). As Harrisson suggests, when we have a more detailed picture of the prehistory of Southeast Asia we will find that the broad smooth movements of people assumed from the early, very scattered data are neither smooth nor running in one direction. Detail will show movements in all directions, thus confusing the picture over wide areas.

New Guinea

It has been suggested that the Sa-huỳnh-Kalanay pottery tradition spread into eastern Indonesia and from there along either or both coasts into Melanesia (Solheim 1964*a*). A study of pottery manufacture, the results of which were presented in the same paper, suggests that this tradition spread into Melanesia along the south coast of New Guinea.

Pottery found in an archæological context from sites on the south shore of MacCluer Gulf in western New Guinea has previously been discussed. The close relationship of the decoration and, possibly to a lesser extent, form of this pottery with Kalanay-complex pottery in the Philippines was pointed out (Solheim 1962*b*).

Virtually no other archæological work has been published for New Guinea. As in Indonesia, the other clue to the possible spread of the Sa-huỳnh-Kalanay pottery tradition is present-day pottery. In the Indonesia section above, an incised bowl from Geelvink Bay, West New Guinea was included (Pl. III*j*). Decoration in two other areas shows many resemblances to that of Sa-huỳnh-Kalanay pottery.

Finsch presents a figure showing numerous designs (1903, Abh. 1, p. 330) used on pottery made near Port Moresby on the south coast of New Guinea. Patterns from this figure which are similar to Kalanay patterns (Solheim 1964*b*, fig. 2) are as follows: *g* similar to pattern IV*e*; *h* to pattern VIII*a*; 1 to series 'one'; *m*, *q*, *u*, and *y* bear similarities to the rectangular meander pattern; *s* is a combination of patterns 'one' and IV*f*; *x* is pattern IV*c*. Seven of the other patterns presented by Finsch are variations of triangles, the most common pattern on Kalanay pottery (Solheim 1961*b*: 159). Another Port Moresby pattern *(f)*, small impressed circles, has been discussed above in the section on the Philippines.

In the island of Mailu, east along the south coast from Port Moresby, pottery manufacture was a major industry (Saville 1926: 143). The incised decoration on this pottery is strongly reminiscent of Sa-huỳnh-Kalanay decoration. The Australian Museum in Sydney has a number of pots from there. The following plates were taken by C. V. Turner of the Australian Museum. Similarities between the Mailu examples and Sa-huỳnh-Kalanay decoration are as follows: Plate IV*a*: series 'one' Kalanay pattern (Solheim 1964*b*: fig. 2); IV*b*: pattern IV*c* (*ibid.* fig. 2); IV*c*: pattern IV*a* (*ibid.* fig. 2); V*a–d*: variants of series 'two' patterns (*ibid.* fig. 2); VI*a*: nothing exactly the same but generally similar to pattern II*b* (*ibid.* fig. 2), to the sherd on the left in the middle line of Plate V from Samrong Sen (Mansuy 1902), and to the curvilinear elements on the unique lid from the Palawan caves mentioned in the Philippine portion of this report; VI*b*: similar to VI*a*, to the right and centre sherds in the middle row of Plate V from Samrong Sen *(ibid.)*, and *h* in Plate IV from Niah Cave (Solheim, Harrisson, and Wall 1961); VI*c*: nothing quite like this but the general impression is much like the alternating triangles of figure 1*j* from Sa-huỳnh (Solheim 1961*c*: 104), and the alternating rectangles from Samrong Sen (Malleret 1961: pl. X*a*); VI*d*: somewhat similar to VI*c* and to Figure 2 *o* from Sa-huỳnh (*ibid.* 105); VI*e*: similar to the two sherds on the right in the middle row of Plate VII from Samrong Sen (Mansuy 1902), and to the sherd in the upper left hand corner of plate XVIII from Galumpang (Callenfels 1951); VI*f*, VII*a*: similar to figure 1*k* and figure 2*d* from Sa-huỳnh (Solheim 1961*c*, 104–05); VII*b*: nothing like this except in its use of triangular elements to make up the pattern; VII*c*: variation of pattern VIII*b* (Solheim 1964*b*: fig. 2); VII*d*: variation of VII*c*; VII*e*: variation of pattern VIII*a* (*ibid.* fig. 2); VII*f*: variation of pattern VIII*c* (*ibid.* fig. 2). Similar decoration is presented by Saville (1926: 145–51). All of these designs are in a horizontal band around the neck or rim of a globular pot. They are all bordered in ways similar to those of the Kalanay pattern 'one' series (Solheim 1964*b*: fig. 2). It is interesting to note that the Mailu potters have meanings for the patterns they use, based in most cases on resemblance in form with some natural object (Saville 1926: 145–51).

The resemblance of the Mailu and Port Moresby patterns to those of the Sa-huỳnh-Kalanay pottery tradition suggest that the tradition spread along this coast. Pottery of the north coast of New Guinea not having been examined, nothing can be said about its possible movement there. The forms of the Mailu pottery are all apparently the same as that in Plate IV*a*, and they do not suggest a relationship to the Sa-huỳnh-Kalanay tradition. While the patterns of decoration are shared, the style in which they are used differs considerably. There is a relative rigidity in the Mailu application but none with the Sa-huỳnh-Kalanay. One would infer that either these patterns have reached the Mailu people by diffusion, or that if their ancestors made pottery in the Sa-huỳnh-Kalanay tradition there has been a considerable change in their culture through time. Without reasonably close resemblance in form, decoration, and style in combination, it cannot be claimed that this present-day pottery is related to a specific prehistoric pottery tradition. I do believe, however, that present-day pottery decoration of Port Moresby and Mailu indicate some form of contact, direct or indirect, between its makers and potters belonging to the Sa-huỳnh-Kalanay tradition. Archæological excavation along the south coast will reveal whether this tradition was brought by this route.

MELANESIA

Poulsen, reporting on Tongan pottery (pp. 184–195), mentions its relationship with pottery from Site 21 in Fiji, the Ile des Pins, Site 13 in New Caledonia, and Vuatom, New Britain. A quick look at the decoration from the southern islands of this group (Tonga—Poulsen; Fiji—Gifford 1951: pl. 19, three sherds upper right hand corner; Ile des Pins—Golson 1960: 4; New Caledonia—Gifford and Shutler 1956: pls 16, 22 and 23) shows their close resemblance. There are many general similarities in decoration between this and Sa-huỳnh-Kalanay pottery but little specific similarity. Gifford and Shutler (1956: 94) in pointing out foreign cultural relationships of Site 13, compare its pottery to that of Galumpang. All resemblances in form and decoration between the pottery of these two sites apply as well to the general Sa-huỳnh-Kalanay. The primary reservation is that there is no roulette marking on the Galumpang pottery, while that of Site 13, of Tonga and of Site 20 in Fiji is much decorated with the roulette technique. Neither Gifford (1951) nor Gifford and Shutler (1956) indicate specifically how they know that the decoration was actually done with a roulette. Poulsen in his Tongan report (p. 185) specifically states that the decoration is done with a dentate tool and not a roulette, though he does not mention how he distinguishes, on the pottery, between the two. Assuming that Poulsen is correct, this method of decoration no longer creates a distinction between southern Melanesian and Sa-huỳnh-Kalanay pottery, as the dentate stamp was used for decoration in Malaya (Malleret 1961: pl. X*b*) and in Annam (possibly roulette; Malleret 1957, fig. 1). The rocker stamping from Site 13 in New Caledonia, not mentioned by Gifford and Shutler (Gifford and Shutler 1956: pl. 22 *t–v* and pl. 23*w*, *aj*, and *am*) is no problem either, as rocker stamping was used at Mlu Prei, Cambodia (Lévy 1943: pls XXXVI 15–19, XXXIII 14–16, and XXXIV 1). Still, there is no strong feeling of close resemblance between Sa-huỳnh-Kalanay Tradition and these specific sites in southern Melanesia.

The pottery decoration of the Vuatom site (Meyer 1909) bridges the differences between southern Melanesia and Southeast Asia. Southern Melanesian decorative elements not familiar to Sa-huỳnh-Kalanay decoration, such as the use of arcs in Tonga (Poulsen: p. 186, Figs. 1–5, etc.) and New Caledonia (Gifford and Shutler 1956: pls 16, 22–23) appear at Vuatom (Meyer 1909: 251 fig. *b* and 1093–94: fig. 4–5) in a context quite familiar for Sa-huỳnh-Kalanay pottery. Some of the close similarities of Vuatom and Sa-huỳnh-Kalanay decoration may be seen in: figures 3 and 11 from Vuatom (*ibid.* 1093 and 1095) and pl IV*h* from Niah (Solheim, Harrisson, and Wall 1961); *a* from Vuatom (Meyer 1909: 251) and Kalanay pattern 3*a* (Solheim 1964*b*: fig. 2); figure 8 from Vuatom (Meyer 1909: 1095) and Kalanay patterns V and VII*e* (Solheim 1964*b*, fig. 2); and figure 4 from Vuatom (Meyer 1909: 1093) and plate 19*b* from the Philippines (Solheim 1964*b*). It is to be hoped that this or similar sites are still in existence. Excavations should be made on Vuatom as soon as possible.

CONCLUSIONS

It is still too early to make definite conclusions about the hypothesized Sa-huỳnh-Kalanay pottery tradition and its possible movements. The increasing amount of evidence available, so far, supports at least the hypothesis of a pottery tradition containing most of the elements of the Sa-huỳnh-Kalanay. The major questions at present are: whether the neolithic pottery of Kanchanaburi and Gua Cha are within this tradition; if so, what is its dating; how far does the tradition extend; and how did it reach its area of total extention?

There is some conflicting evidence that must be resolved before some of the above questions can be answered. In the dating, the early C-14 date for Site C13 in New Caledonia does not fit. Our slight knowledge of the date of the decoration which relates southern Melanesian to Sa-huỳnh-Kalanay pottery does not place it early enough to fit the New Caledonia date. Many of the elements of this decoration are similar to those on Dongson bronzes and so probably came from the same source (Solheim 1961*a*: 187). Heine-Geldern (1951) has suggested that these elements reached Southeast Asia sometime in the 8th, 9th or possibly the 10th centuries B.C. Even if they were present in northern Indochina by 900 B.C. they would not have had time to reach New Caledonia by 846 B.C. (Gifford and Shutler 1956: table 46), *and* after considerable evolution in content. To accommodate this early New Caledonia date I have previously thought it probable that this pottery originated in Japan and was probably not related to the Sa-huỳnh-Kalanay Pottery Tradition (Solheim 1964*a*). But with the Vuatom pottery so nicely bridging the gap it seems that southern Melanesian pottery must be at least primarily related to the Sa-huỳnh-Kalanay pottery tradition, hence that this date is too early. The two dates for Site C13 were reversed, with the 2,800 ± 350 date at 24–30 inches and the 2,435 ± 400 date at 30–36 inches (Gifford and Shutler 1956: 89). Thus there is good reason to believe that this early date is an error. As mentioned by Crane, the inversion is within the standard deviation of the two dates so there is no difficulty; it just indicates that the probable date is closer to the later than to the earlier (Gifford and Shutler 1956: 89).

The few Vuatom sherds illustrated show such striking similarity to Sa-huỳnh-Kalanay that it may be that Vuatom pottery belongs with that tradition. Southern Melanesian pottery cannot for the moment be said to belong, though further excavation may change this. There seems to be no question of the relationship between southern Melanesian pottery and the Sa-huỳnh-Kalanay pottery tradition. The questions are whether the tradition concept is tenable and if so, how far it should be stretched. There must be an end somewhere.

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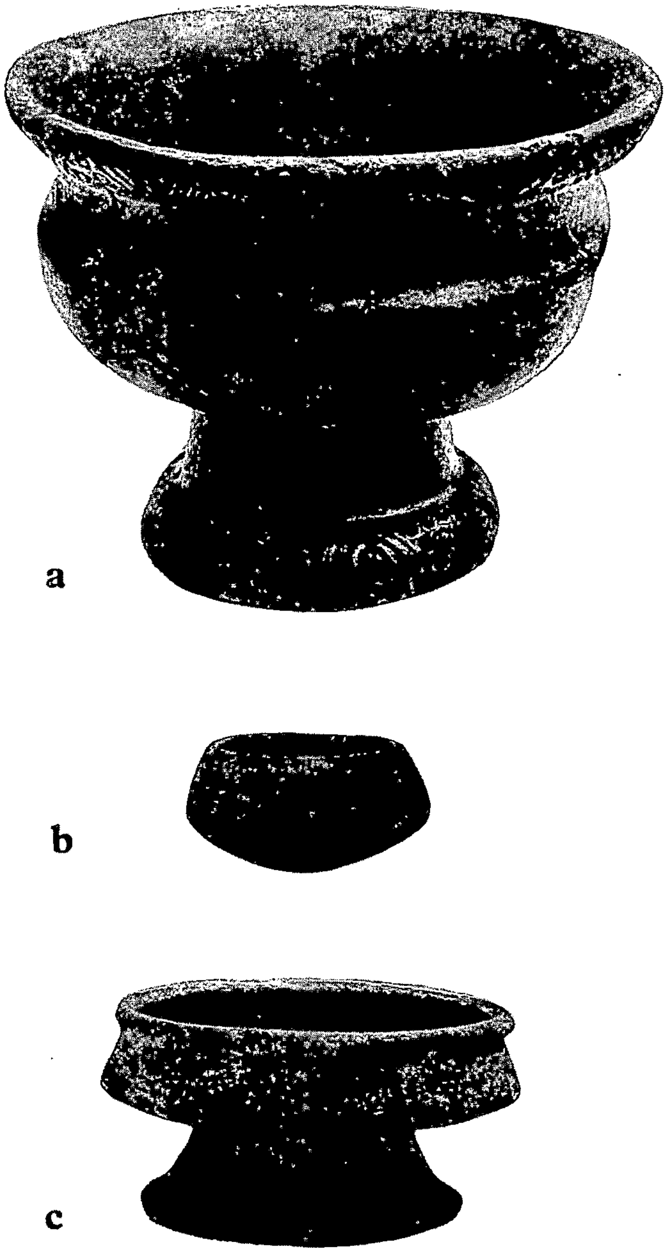
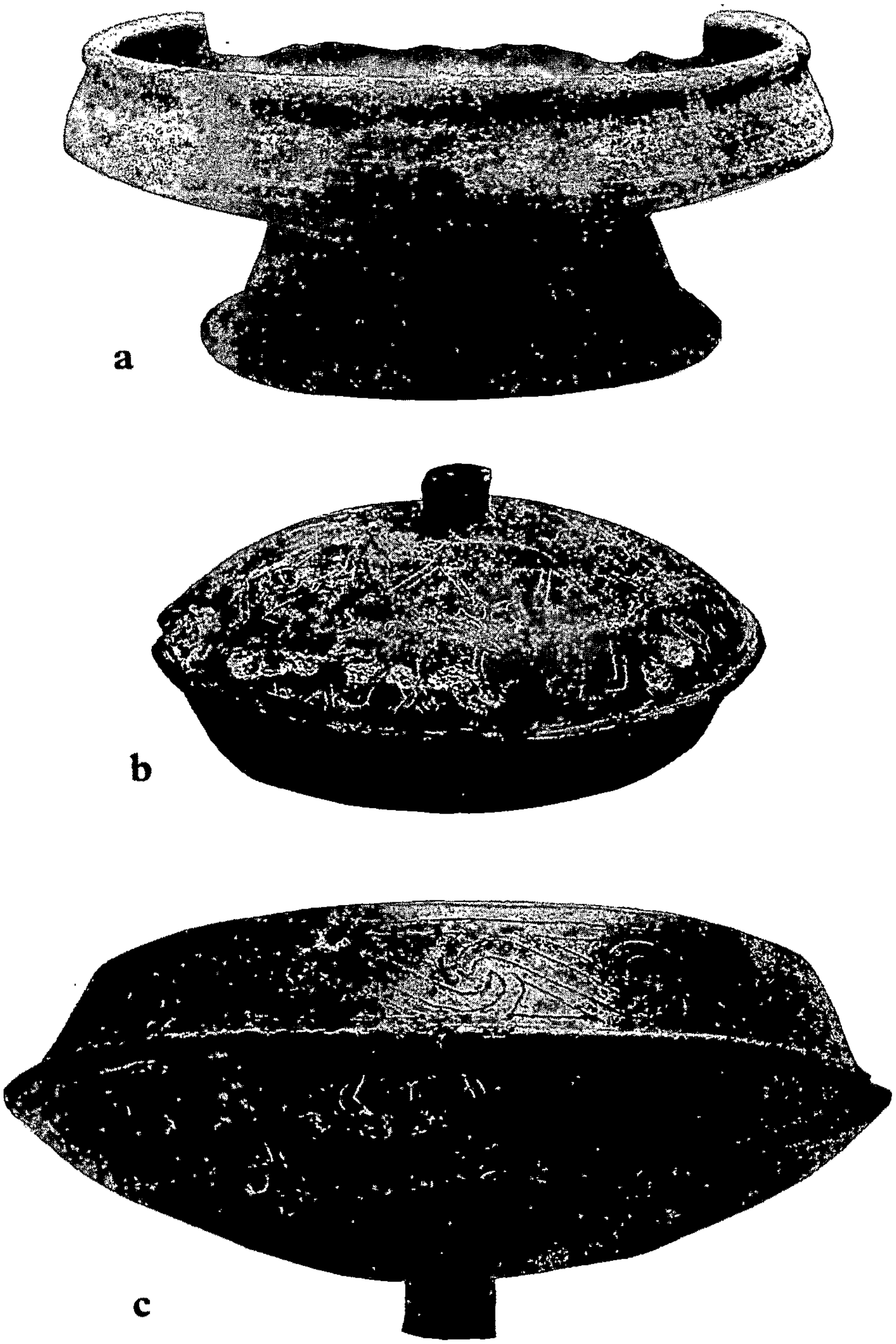
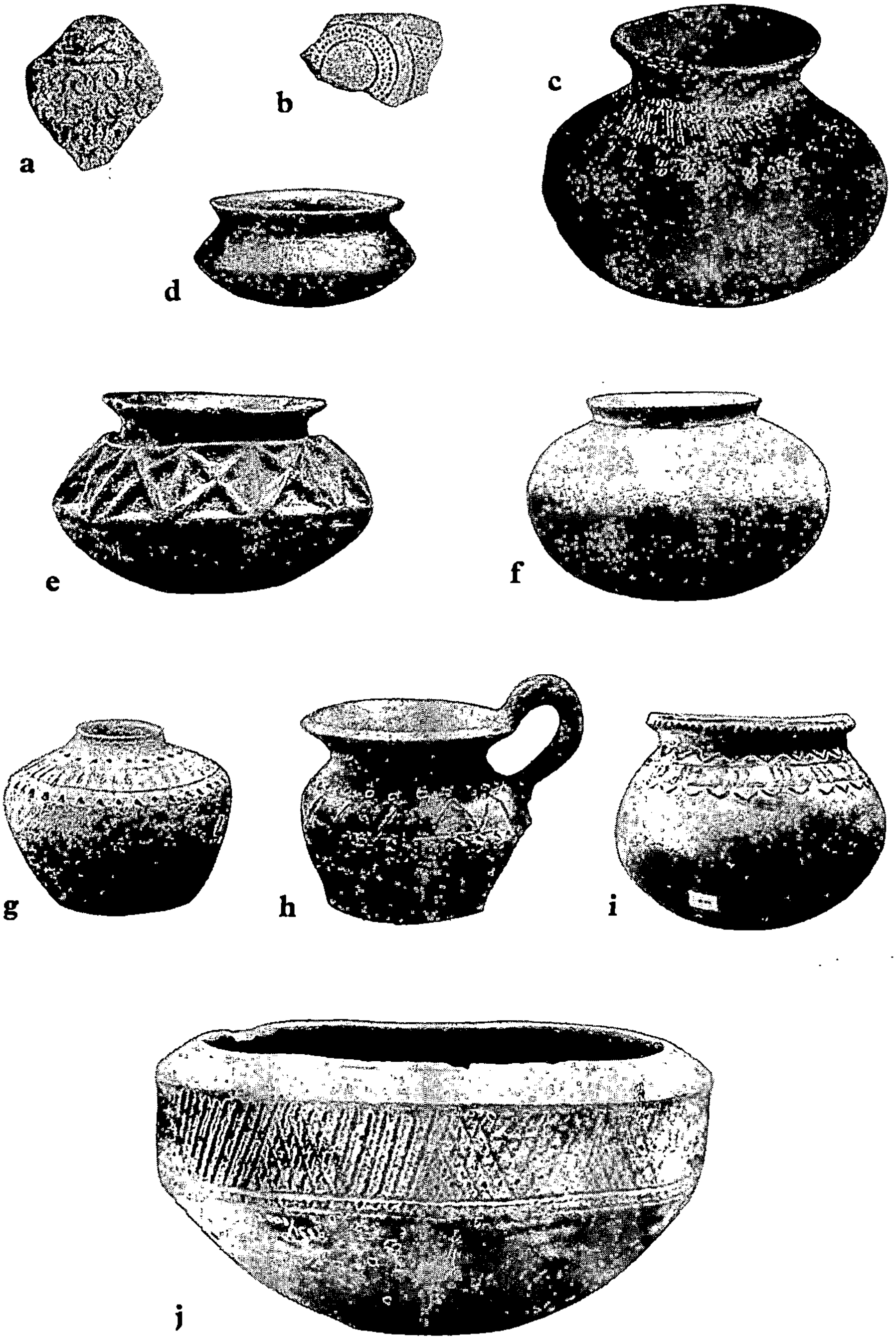


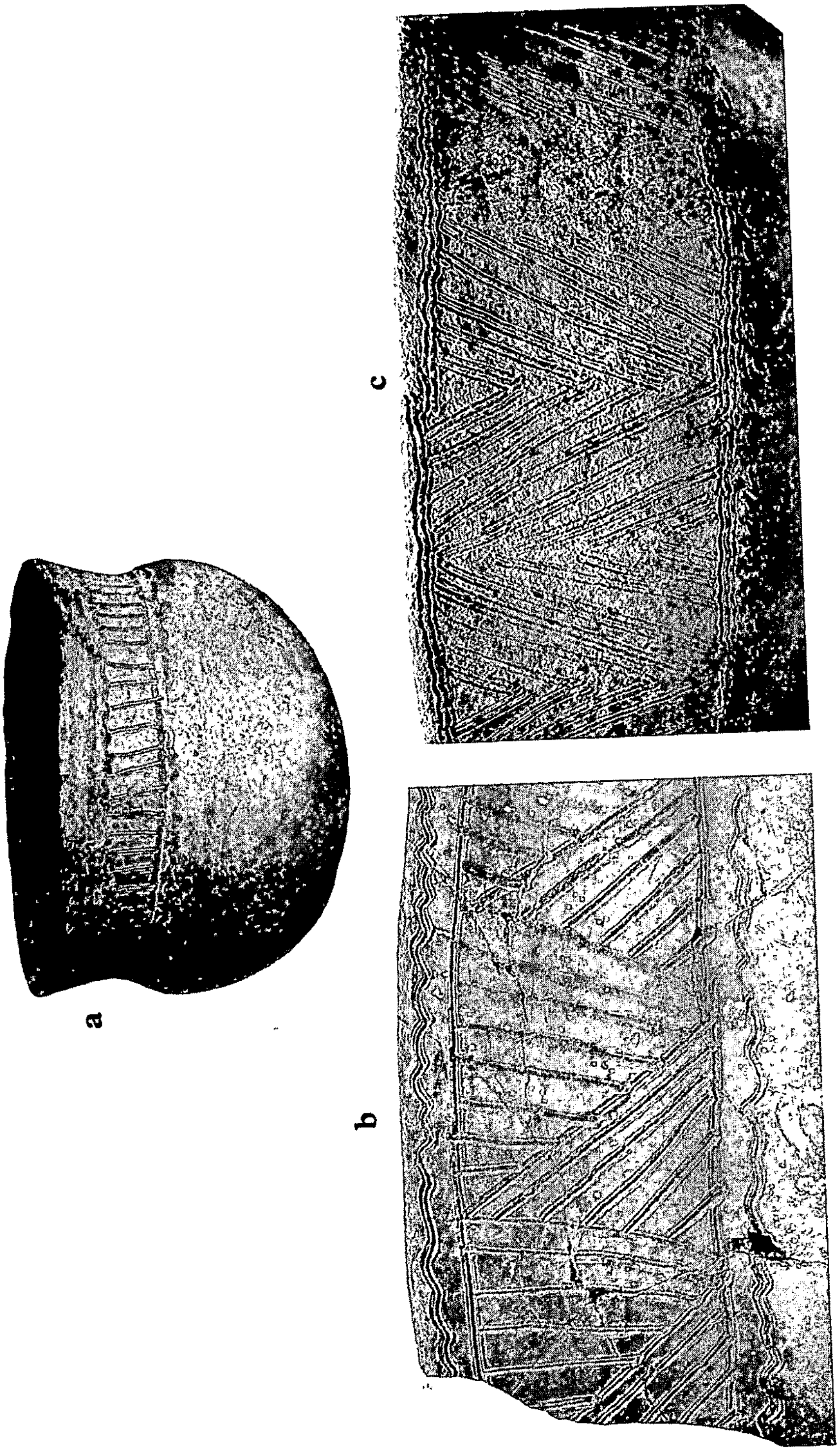
Sa-huỳnh-Kalanay pottery from the Philippines and Thailand: *a.* red-slipped, impressed bowl with ring stand from Lipuun Point, Palawan, Philippines; *b.* plain shallow bowl, see p.200; and *c.* carved and impressed bowl with ring stand from Samui Island (Fig. 2*c* and p. 203), Suratthani Province, Thailand.



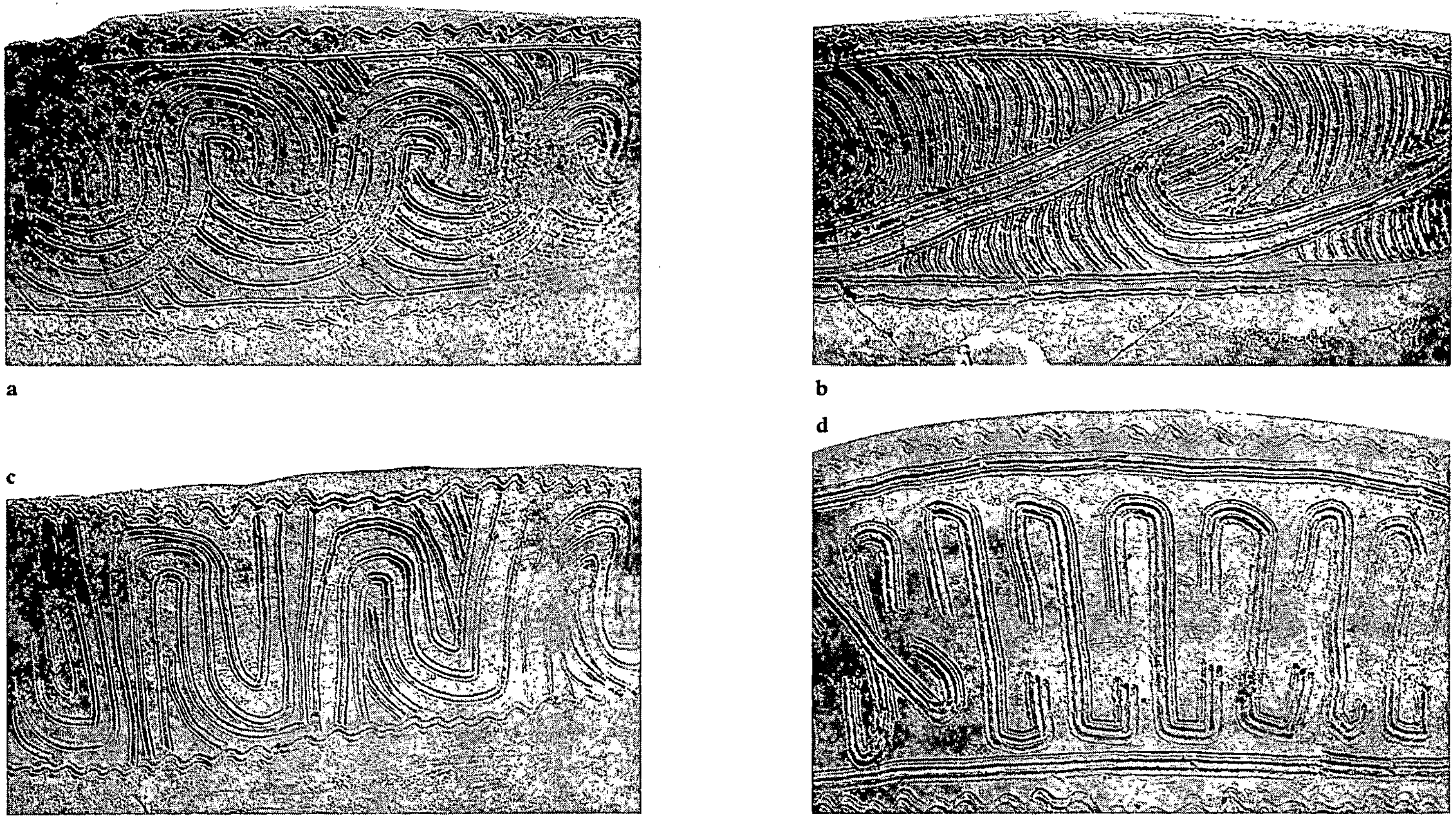
Sa-huỳnh-Kalanay pottery from Samui Island, Suratthani Province, Thailand: *a.* carved and impressed bowl with ring stand; *b.–c.* incised and painted lid with handle. See p. 203



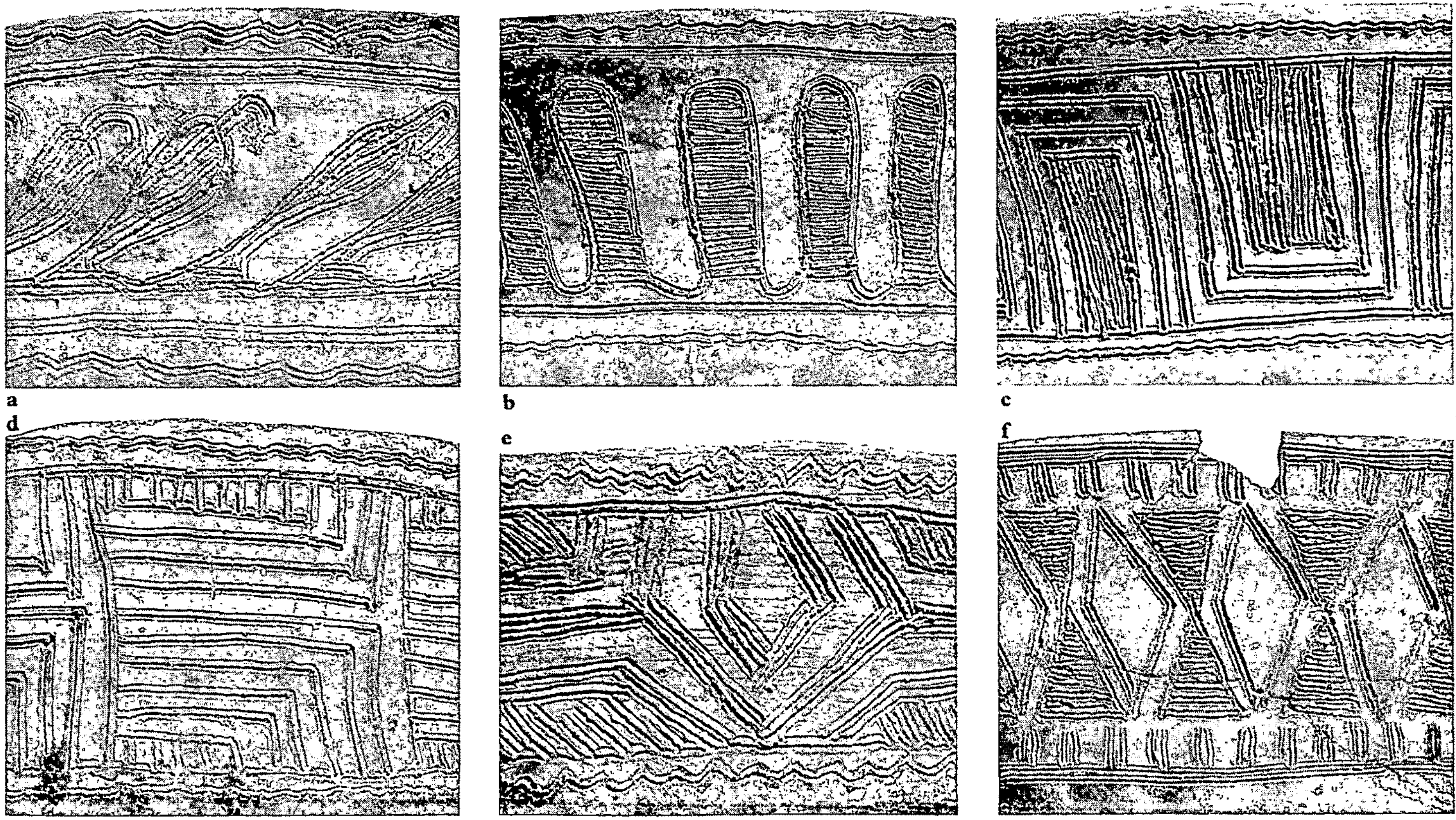
Potsherds and earthenware pottery from Indonesia: *a.–b.* sherds from Galumpang, west central Celebes; *c.* pot from Minangkabau District, Sumatra; *d.–e.* vessels from Gajoland, Sumatra; *f.* pot from Lombok; *g.–h.* vessels from southern Celebes; *i.* pot from Kai; *j.* bowl from Geelvink Bay, West Irian. See pages 205–6



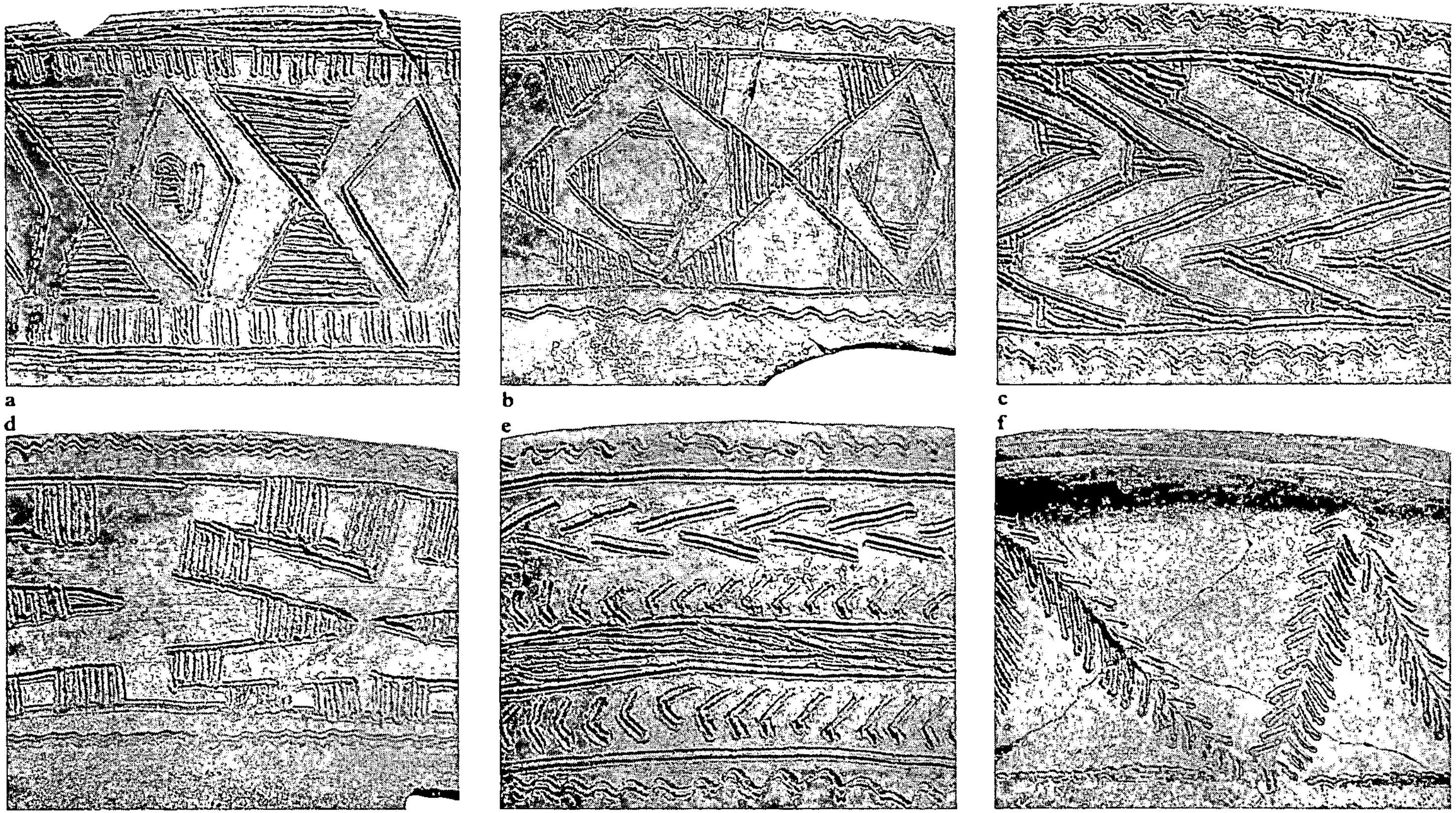
Pot and incised patterns on outer surface of rims from Mailu, southeastern New Guinea. See pp. 206–207
Photographs by courtesy of The Trustees of the Australian Museum, Sydney



Incised patterns on outer surface of rims from Mailu, New Guinea
Photographs by courtesy of The Trustees of the Australian Museum, Sydney



Incised patterns on outer surface of rims from Mailu, New Guinea See pp. 206–7
Photographs by courtesy of The Trustees of the Australian Museum, Sydney



Incised patterns on outer surface of rims from Mailu, New Guinea
Photographs by courtesy of The Trustees of the Australian Museum, Sydney

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10

Ra'iupu Marae of Makatea, Tuamotu Islands, Oceania

PIERRE VÉRIN

Professor K. P. Emory (1933, 1934) reported only one existent *marae* on Makatea, that of Ra'iupu—but nobody could tell me where it was when I prospected the island in October 1961. It was rediscovered however in the first half year of 1963 by the Compagnie française des Phosphates d'Océanie, which then cleared the site of its thick vegetation and made a path leading to it—this without digging up the site for the valuable phosphates it contained—a most commendable act.

The *marae* is on the Patia domain, while Marama R414 is a further 100 metres southwest of the road from Temao to Moumu, where on Emory's map it is 'Patia, Marae' (Fig. 1, map). When phosphate ore was first excavated here, the *marae* was spared, but shrubs and the roots of an enormous banyan drawing substance from the rich soil soon overgrew and hid the site.

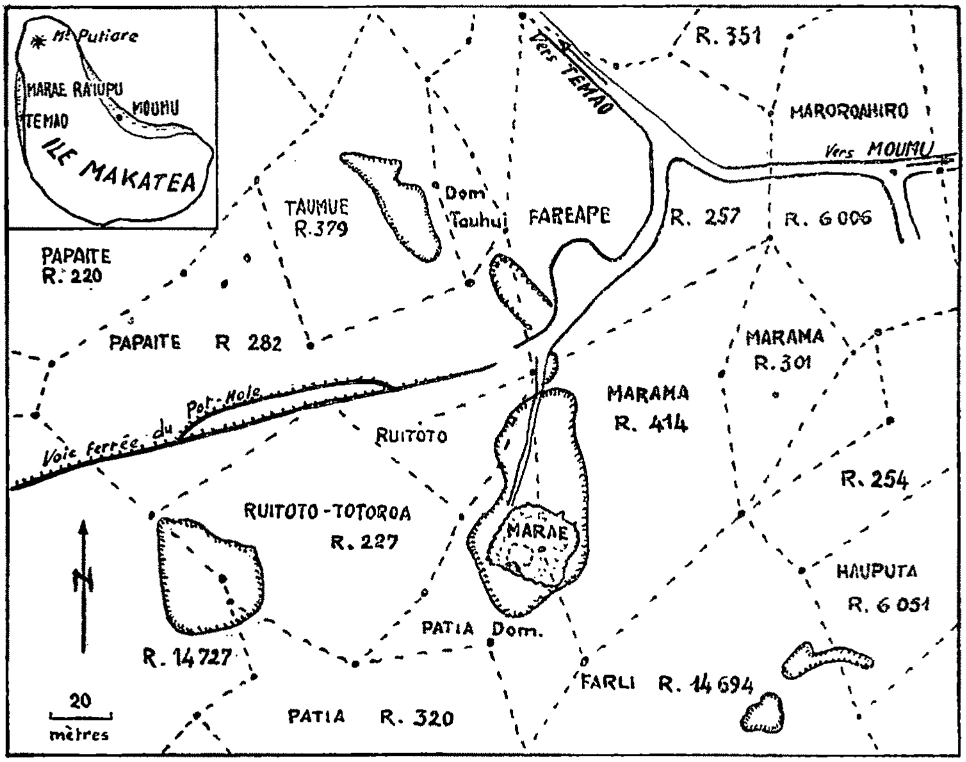
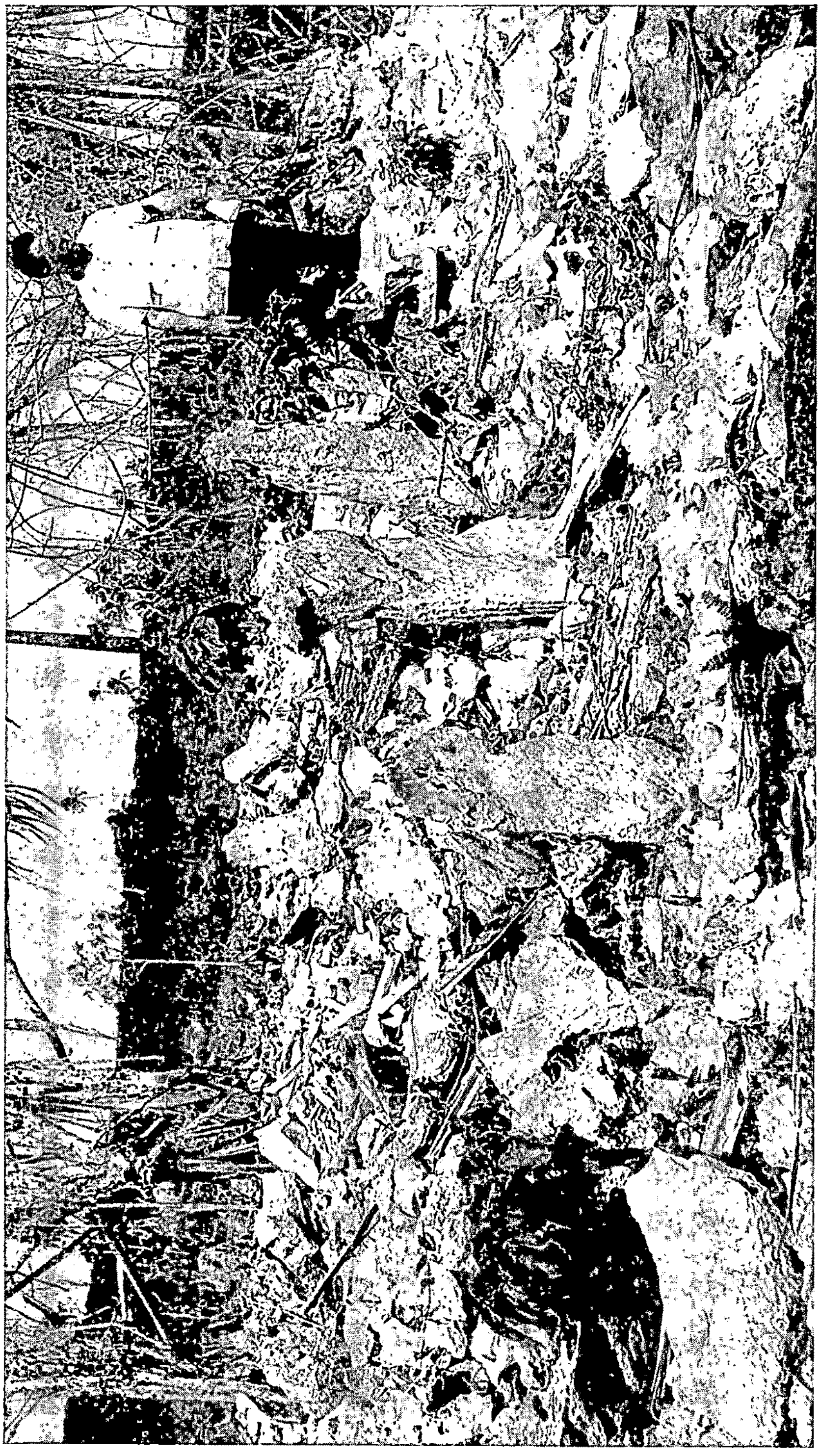


FIG. 1. Position of the Ra'iupu *marae* on Makatea Island. *From a plan made by the C.F.P.O.*



The Ra'iupu *marae* (Ahu)

Photograph by Frank Ly Siou

The monument is on a terrace whose perimeter, embanked with boulders, is about one metre thick (Fig. 2).

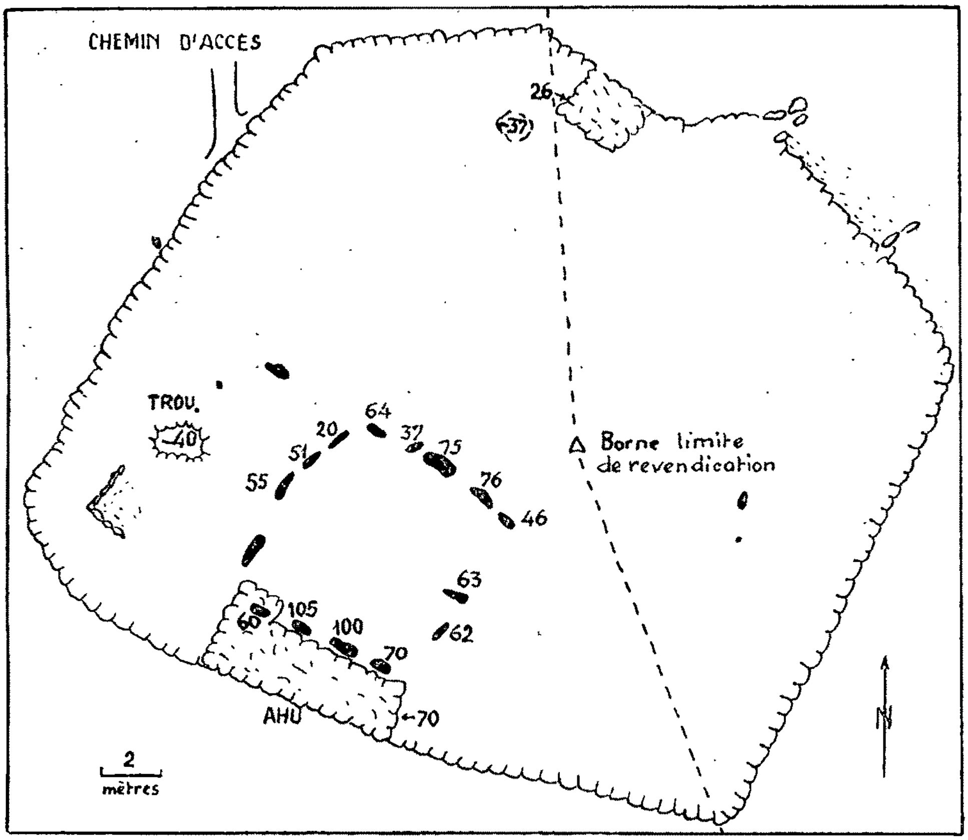


FIG. 2. Plan of the Ra'iupu *marae* on the terrace of the undisturbed deposit of phosphate. *By permission of the C.F.P.O.*

The *ahu* in the southwest part is still in perfect condition, and is all round about 50 centimetres high. Roughly cut coral slabs support the 'raw' slabs which are piled up inside, horizontally (Pl. I).

Three upright stones face the *ahu.* One is a metre higher than the other two; the central stone, roughly anthropomorphic, looks much like the upright stones of the Katipa *marae* of Fakahina or the Ahutu *marae* of Tatakoto. A fourth stone stands on a small platform annexed to the *ahu,* as frequently seen in the *marae* of the Society Islands (the 'interior type' of Emory).

Other upright stones border the courtyard, which is roughly rectangular. A solitary stone 50 centimetres high lies outside the courtyard and faces the southwest annex structure. This is a hollow 40 centimetres deep into which the refuse of the ceremonial offerings were probably emptied. Another hollow was dug north of the *marae,* near a small rectangular pile of coral, situated in its north part (not shown in Emory's map).

When we examined the site, we found it strewn with human bones. These had been deposited on the monument by workmen who must have come across them when working on the neighbouring phosphate deposit.

The Ra'iupu *marae* shows the usual characteristics of the religious structures of the Western Tuamotu Islands: a rectangular court, a quadrangular *ahu* built of undressed coral and smallish in height; upright stones in front of the *ahu* with a small annex platform on which is also an upright stone.

However, its courtyard is covered all over with undressed slabs because of the unevenness of the ground of Makatea, which had to be banked up to form an artificial terrace.

The *marae* has strange similarities with ancient religious structures of the Society Islands. These also have an *ahu* without steps (of undressed stones) and a courtyard buttressed along its perimeter. These characteristics are also to be found on some of the Rurutu *marae*. The resemblances between the ancient monuments of the Western Tuamotu, of Tahiti and Rurutu are so striking that they have a common origin probably in the Society Islands, where they were elaborated.

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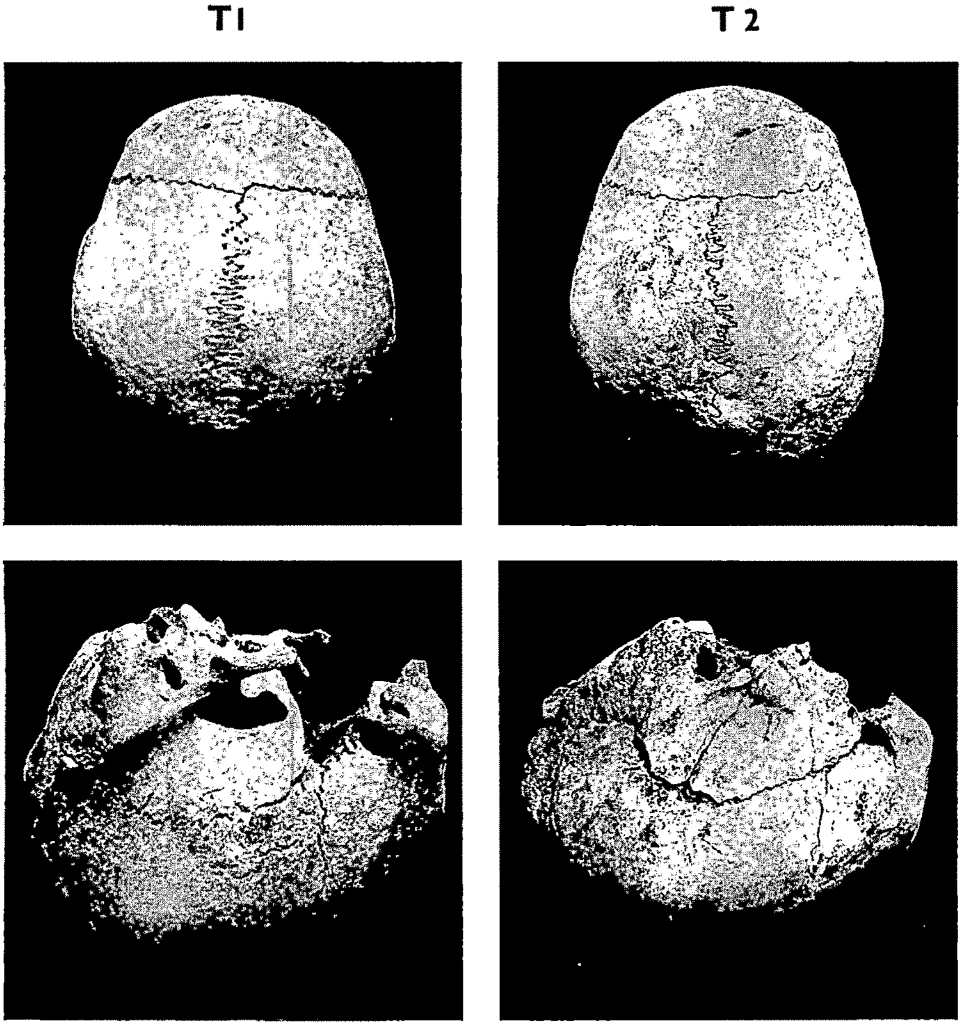
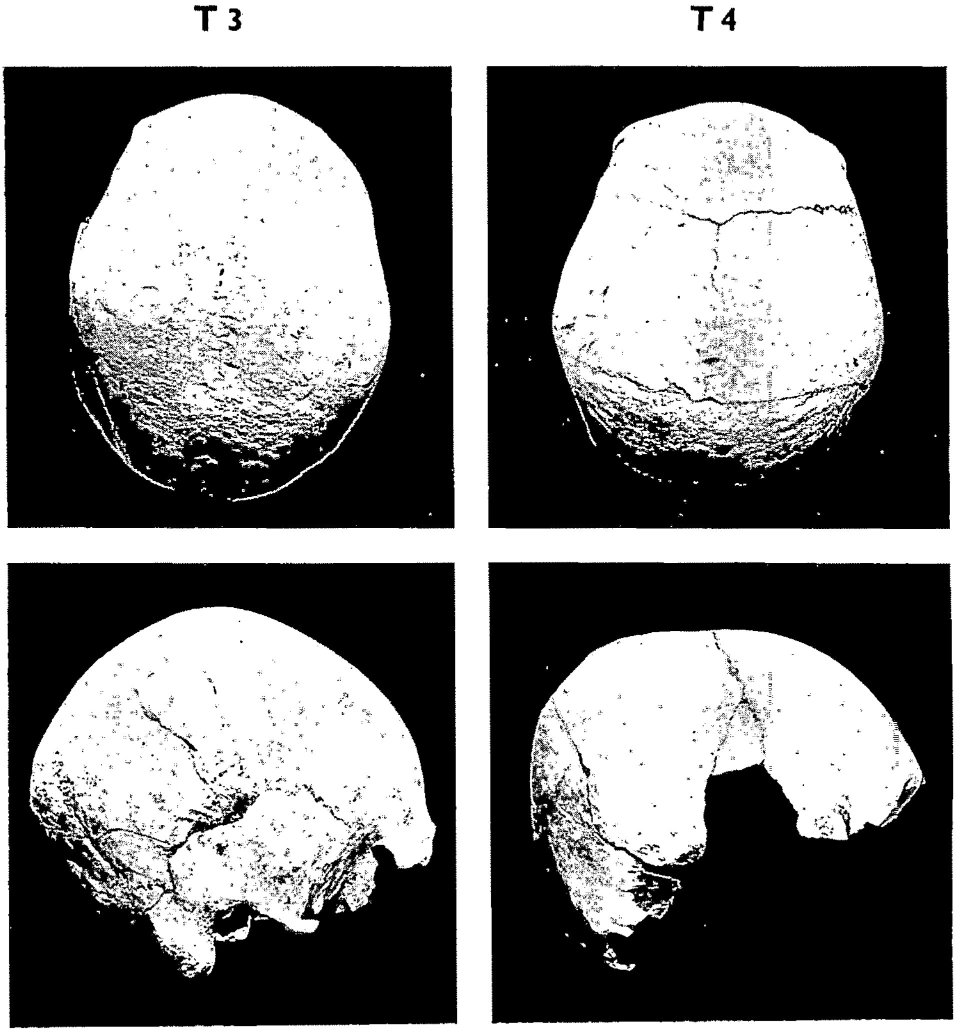


Human crania found on Ra'iupu *marae*, Makatea, Tuamotu Islands. See p. 215.
Photographs by Cl. Chippaux.



Human crania found on Ra'iupu *marae*, Makatea, Tuamotu Islands.
Photographs by Cl. Chippaux.

ANNEX

OBSERVATIONS SUR QUATRE CRÂNES RETROUVÉS PRÈS DU MARAE RA'IUPU

PAR CL. CHIPPAUX

Indice crânien horizontal.

T1 = 80,12 Brachycrâne juste à la limite de la *mésocrânie.*
T2 = 73,1 *Dolichocrânie.*
T3 = 76,1 *Mésocrânie.*
T4 = 82,6 *Brachycrânie.*

L'indice est dispersé et il y a tendance à la mesobrachycrânie.

Indices de hauteur.

T1 Indice moyen de hauteur basio bregmatique = 95,9
Indice moyen de hauteur porio bregmatique = 81,2
= concordance: *crâne haut.*

T3 Indice moyen de hauteur basio bregmatique = 88,4
Indice moyen de hauteur porio bregmatique = 73,9
= concordance: *crâne haut.*

T4 Indice moyen de hauteur basio bregmatique = non calculé car basion [detruit.
Indice moyen de hauteur porio bregmatique = 73,4
= *crâne haut.*

Donc trois crânes 'haut' aux indices concordants.

Pour *T2*, les indices sont discordants.

En effet, si pour l'indice moyen de hauteur basio bregmatique, on obtient une valeur de 85,10, donc crâne haut/limite du crâne moyen, l'indice moyen de hauteur porio bregmatique indique un crâne 'bas'/limite crâne moyen avec une valeur de 67,10.

Ceci est dû à la distance assez forte entre le plan du basion et celui du porion (différence de 30 mm) alors que généralement elle oscille autour de 20 mm. J'ai déjà observé le fait sur des crânes malgaches.

Avec cette réserve, les quatre crânes sont du type 'haut' suivant les indices basio bregmatiques.

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Japanese Archæological Terms with English and German Equivalents

HERBERT MELICHAR

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Japanese Archæological Terms with English and German Equivalents

HERBERT MELICHAR

Introduction

Terms in archæology, as well as in any other field of knowledge, necessarily bear the hallmark of the language in which they were first put into circulation. This, however, poses many problems to any compiler of an international vocabulary of scientific terms, as each word has to be examined in the context of its historical and local origin, before an internationally acceptable nomenclature can be established. This is particularly so when divergent interpretations of the meanings of a term already exist.

Disagreements on terms and their meaning even among Western scholars have affected good international co-operation—and how much more will this be so when we come to correlate them with Japanese, for example. Postwar, most scholarly publications in Japan carry brief résumés of their articles in some Western language. This very commendable practice is not without danger, particularly when a Japanese term is equated with a Western term from which it materially differs. To give an example, for some types of stone implements certain names have been used and accepted internationally as equivalent though no homologous relation between the object of specifically Japanese origin and the nearest Western type as yet can be proved.

Thus a Western scholar, who reads articles and summaries that give terms with a specifically Japanese connotation, may be misled by the Western terms used by the Japanese scholar or his translator. When such terms become accepted this can cause infinite complications the undoing of which may take years, and even then they tend to persist and poison co-operative work.

The beginning of the terminological contacts between the West and Japan goes back to the Meiji era, when Western scholars published several reports on the prehistory of Japan (Franks 1868, Baux 1873, Maget 1876) which caught the attention of the Japanese scholars and aroused their enthusiasm for developing this new branch of science. After the Japanese National Museum was established in 1872, practical work on Japanese soil began with the excavation of the shell mounds at Ōmori, near Tōkyō, in 1878, guided and directed by Edward Sylvester Morse (Morse 1879), and followed in the same year by the research on the shell-mound of Okadaira (Ibaraki prefecture) which was conducted by a Japanese team alone (Iijima-Sasaki 1883). As no proper terminology as yet existed in this new field, the Japanese had to do with whatever was available: they translated foreign terms and, in writing them, used Chinese characters for analytical reproduction of the content and meaning of the foreign term. This method of 'loan-translation' (*shakuyō-genshō* 借用現象) was, and still is, used in many fields, particularly in philosophy and other humanities, natural sciences such as physics, etc.

The ever increasing interest in the non-literal material of the past as a new kind of historical source finally resulted in the foundation of the Japanese Anthropological Society (*Jinruigaku no Tomo*, じんるいがくのとも, 1884) and the *Journal of the Japanese Anthropological Society* (*Jinruigakkai-hōkoku* 人類學會報告, 1886) which became the real starting point of Japanese prehistorical research and its publication. Beginning with 1886, when Western writings on Japanese prehistory had come to an almost abrupt stop, the Japanese continued the research, now independent of Western influence, thus enlarging and improving the archæological vocabulary and basing it on more native views and words. The mass of present Japanese archæological terms originated in this second phase.

The third phase of the development of the Japanese archæological vocabulary has been postwar. Since the end of the war systematic research work has been done on the so-called Japanese Palæolithic Age (non- or pre-ceramic age 無土器文化, 先繩文文化時代) and serious controversies have taken place which even to this day have been only partly settled. Now the scholars faced the same problem as their predecessors in the Meiji era. In the West palæolithic research had by this time established its present terminology. The Japanese scholars, therefore, had to take it into consideration, re-examine the terms native and foreign, and to decide whether to use them or to create completely new expressions.

Since it was possible to use both techniques simultaneously, the net result was an overwhelming accumulation of words and the creation of synonyms, which in some cases proved to be superfluous, but in other cases could express fine differences of nuance.

The Japanese archæological vocabulary in current use falls into four main categories:*

1. Native Japanese expressions and names for objects and concepts of Japanese origin, or of foreign origin but viewed in a native Japanese perspective:
   Jōmon, Yayoi, Kofun period, etc.
2. Translations of foreign terms according to their meaning and content into Japanese:
   'small-shaped-stone-edge' for 'microlith', 'grasp-hammer' for 'hand-axe', etc.
3. Creation of Japanese words corresponding to foreign terms, especially compounds:
   'palæo-lithic', 'neo-lithic', 'Bronze Age', 'Iron Age', etc.
4. Transliterations of foreign terms using the Japanese syllabary and Roman letters:
   'buredo' for 'blade', etc.

[*] These categories apply only to the terms in themselves and not to the systematic classification of the material. The latter itself falls into four groups:

a. The comparative-descriptive aspect: blade.
b. The function-interpreting aspect: scraper.
c. The analytical aspect: stone or bone implement.
d. The technical aspect (i.e., according to the manufacturing process): biface, flake.

Moreover, Japan has four ways of writing (Chinese characters, Katakana, Hiragana and Roman letters), which are used in different combinations according to the particular case. Japanese terms are, therefore, full of variety in structure, content and pictography.

Any treatise on, or analysis of, the vocabulary of a given field of knowledge requires first a selection of words to be examined. The words selected for the list presented here are taken from a large collection which I compiled during long years of research in Japan, and are mainly those not contained in an ordinary dictionary, or those which have undergone more or less change in meaning because of special usage. I have sought to include as many words as possible, while at the same time choosing those that are characteristic of Japanese term-making and reflect the Japanese terminological approach to prehistory material.

Since most terms consist of a combination of words, the emphasis in the following vocabulary is on them rather than on single words. Terms on the preliterate period receive more attention than those on the metal-age cultures, because during the protohistoric period certain traditions, which in many respects have continued to the present, came into existence. These traditions fostered the growth of a group of artisan's expressions which are current jargon today, and which must be kept out of our vocabulary. Special names of Chinese bronze vessels, the typology of the Chinese-Korean bronze mirrors and their decorative motifs, special parts of swords, armour, etc., are therefore omitted from the word-list or included only in limited number.

Most of the English and German words have been suggested to me by their current usage in Western archæology. In some cases, i.e., when a piece-to-piece comparison between Western and Japanese objects appears to be tolerable, the English or German equivalents have been adopted directly or with slight modification. In other cases the English and German words are new constructions of my own. With these I have taken the precaution of avoiding mere translations of Japanese words and have tried, as far as possible, to coin expressions in accordance with usage in English and German term-making, so as to facilitate their general acceptance.

The English and German expressions corresponding to the Japanese terms, though given in concise forms, are to be considered only as explanations or interpretations of Japanese terms. The English and German words respectively are not translations of each other but go directly and independently to the Japanese key-word:

English ←——— Japanese ———→ German

Therefore this vocabulary should not be used as an English-German (or *vice-versa*) archæological dictionary.

One more obstacle to obtaining a uniform use of archæological terms is the individuality of each artifact. Those artifacts which are not types or guide-objects allow the archæologist in many cases much freedom to create his own terms and use individual expressions based on experience and familiarity with the material, personal views and ideas, associations and secondary images, as well as the so-called 'occasional meanings' of words, etc. A constant problem in this connection is, e.g., the pottery types and their correct nomenclature. This is true of Japanese terms presented in this word-list, and to which the English or German equivalents are consequently no exception.

Scientific terminology must be based on certain conventions in concepts, language and script which make it acceptable. Clearness will be achieved when the scientists come to an agreement on the meaning of the terms. It is with this in mind that this work was planned, for its primary purpose is to give the Western readers of Japanese material a clear meaning of each Japanese term. I therefore hope the word-list will be found useful and practical, but if some terms are to be replaced by better ones they will still have to conform to recognized conventions, as I have tried to make them do.

The vocabulary presented was originally planned as a co-operative work by several scentists. However, the discussions on terminology seem always to end in vagueness, and finally it became necessary to do it alone and with limited means. As errors are unavoidable I shall be grateful to all for constructive suggestions for improvements.

May this trial work give archæologists a further impetus toward international co-operation which might some day bear fruit as, for instance, in a multi-lingual archæological dictionary including also the languages of the Far East.

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A

1 **āchigata-totte** アーチ形把手	Verdeckhenkel	vaulting handle
2 **age-zoko** 揚げ底	eingezogene Standfläche eines Gefäßes	concave base; indented base of a vessel; raised bottom
3 **aiguchi-kamekan** 合口甕棺 *see* **awaseguchi-kamekan**		
4 **Ainu-shiki-doki** アイヌ式土器	Ainu-Keramik: veraltete Bezeichnung für die Jōmon-Keramik	Ainu pottery: obsolete expression for designating Jōmon pottery
5 **ajiro-zoko** 網代底	Gefäßboden mit Gewebeabdrücken	mat-imprinted bottom of a vessel
6 **amadare-ishi** 雨垂石 *see* **hachi-no-su-ishi**		
7 **Amerika-shiki-sekizoku** アメリカ式石鏃	amerikanische Pfeilspitze (mit Fischschwanzbasis)	American-type arrowhead (with fishtail-shaped base)
8 **amime-mon** 網目文	Netzmuster; Netzabdrücke	net impressions; net ornament
9 **amime-yoriito-mon** 網目撚糸文	Fadennetzung; Fadennetzverzierung	netted string ornament
10 **ami-no-omori** 網の錘	Netzsenker; Netzbeschwerer	net sinker
11 **anaguma** 窖	Vorratsgrube	storage pit
12 **asagao-kei-entō-haniwa** 朝顔形円筒植輪	Windenblüten-Zylinderhaniwa; Trichterrohr-Haniwa mit zylindrischem Körper und trichterförmig ausladendem Oberteil	morning-glory-shaped haniwa; trumpet-shaped haniwa with cylindrical body and funnel-shaped top
13 **ashigata-dasei-sekifu** 足形打製石斧	zugeschlagene Knickhacke (Symmetrieachse zeigt einen stumpfwinkeligen Knick oder S-förmige Krümmung)	rudder-shaped chipped stone axe (also called club-foot axe, as the axis of symmetry forms an obtuse angle or has an S-like warp)
14 **ashin-sekkijidai** 亞新石器時代	Aeneolithikum	eneolithic age
15 **ashiwa** 足輪	Fußgelenkschmuck aus zwei zusammengebundenen Eberhauern	leg ornament consisting of two boar's tusks bound together and fixed at the ankle
16 **atsude-ha** 厚手派	dickwandige Keramik	thick-walled pottery
17 **atsude-shiki-doki** 厚手式土器 *see* **atsude-ha**		

18	**awabi-gata-doki** 鮑形土器	Gefäß aus einer Awabi-Muschelschale, deren Innenseite mit Ton verstrichen wurde	vessel made of an awabi shell lined with clay
19	**awasebuta-doki** 合蓋土器	Gefäß mit Deckel	lidded vessel
20	**awaseguchi-doki** 合口土器	zwei mit der Mündung zusammengestellte Gefäße	two vessels fitted together, mouth to mouth, the smaller serving as cover
21	**awaseguchi-** 合口甕棺 [**kamekan**	Doppelgefäß (zur Aufnahme einer Bestattung)	joint jar (for burial); double jar
22	**Awa-shiki-sekkan** 阿波式石棺 *see* **kumiawase-shiki-sekkan**		

B

23	**bachigata-dasei-** 撥形打製石斧 [**sekifu**	Breithacke	spatulate axe or adze; pear-shaped axe (adze)
24	**baichō** 陪冢	Begleittumuli (um ein großes Kofun herum angeordnet)	(several) smaller kofuns adjacent to a large one; satellite (burial) mounds
25	**baifu** 貝斧	Muschelhaue; Muschelbeil	axe made of shell; chopper made from shell
26	**baiki** 貝器	a) Muschelobjekt b) Muschel als Gerät	a) object made of shell b) shell used as implement
27	**baisei-ki** 貝製器	Objekt aus Muschelschale	object made of shell
28	**banki** 晩期	späteste (r, s)	latest
29	**baraieti** バライエティー	Abart; Spielart	variety
30	**basshi** 抜歯	Zahnextraktion (als Zustand der Verstümmelung nach der Operation)	tooth extraction (the state of mutilation after the operation)
31	**baton-do-koman-** バトン・ド [**doman** ・コヌンドマン	Kommandostab; 'Pfeilstrecker'	*bâton de commandement;* 'shaft-straightener'
32	**(monyō no) benka** （文様の）便化	Stilisierung; Schematisierung; Formerstarrung; (der Ornamentik)	conventionalization (of a pattern or design)
33	**bō** 矛	chinesische Tüllenlanzenspitze der späteren Yin-Zeit; nicht zu verwechseln mit *hoko*	Chinese socketed spearhead appearing in the second half of Yin dynasty; not to be confused with *hoko*
34	**bogan** 母岩	(Feuerstein-) Knollen	lump, block (of flint)

35 bōjōsoku 棒狀足	Zapfenfuß (eines Gefäßes)	solid foot or leg (of a vessel)
36 bōjō-tokki 棒狀突起 *see* **nawakake-tokki**		
37 bōringu ボーリング	Sondage; Sondenbohrung (zur Untersuchung des Bodens vor einer Ausgrabung)	boring (examining the soil of a site before making an excavation)
38 bōsei 仿製	nach kontinentaler Vorlage in Japan nachgemacht (Bronzespiegel oder -lanzenspitze)	(bronze mirror or spearhead) manufactured in Japan after a continental prototype
39 boshijō-endosu- [kurēpā 拇指狀エンド・スクレイパー	Daumenschaber	thumb-(end) scraper
40 bōsuisha 紡錘車	Spinnwirtel	spindle whorl
41 bōsuitai 紡錘體	Beschwergewicht (an der Angelleine)	weight, sinker (used for hook-and-line fishing)
42 bunka^1 分化	Absetzung, Trennung (z.B von Hals und Schulter eines Gefäßes)	separation, being set off (e.g. neck and shoulder of a vessel)
43 bunka^2 文化	Kultur: die Gesamtheit der spezifischen Lebensformen einer menschlichen Gemeinschaft	culture: the sum total of the ways of living built up by a group of human beings
44 bunka-hendō 文化變動	Kulturwandel	culture change
45 bunka-henyō 文化變容	Akkulturation	acculturation
46 bunka-ibutsu 文化遺物 *see* **jinkō-ibutsu**		
47 bunka-ken 文化圈	Kulturkreis; manchmal fälschlich statt *bunka-ryōiki* verwendet	*Kulturkreis;* sometimes erroneously used for *bunka-ryōiki*
48 bunka-naiyō 文化內容	Kulturinhalt	culture content
49 bunka-ruikei 文化類型	*pattern of culture*	pattern of culture
50 bunka-ryōiki 文化領域	*culture area*	culture area
51 bunka-sō 文化層	Kulturschicht (im Boden)	culture layer (as deposit)
52 bunka-zai 文化財	Kulturgüter; Kulturdenkmäler	cultural assets or properties
53 bunmei 文明	Zivilisation; Hochkultur	civilization; civilized society

54 **bunpū** 分布	Verbreitung	distribution
55 **bunpū-ken** 分布圏	Verbreitungsgebiet	range, area, of distribution
56 **burēdo** ブレイド	Schmalklinge (lang-schmaler Abschlag mit mindestens drei Abschlagnegativen auf der Dorsalseite und ein bis zwei Arbeitskanten)	blade (oblong slice struck off a nucleus with at least three flake scars on the dorsal side and one or two working edges)
57 **burēdo-furēku** ブレイドフレイク	Klingenabschlag	blade flake
58 **byuran** ビュラン刻刀	Burin; Stichel	burin; graver

C

59 **chashi (kot[su])** チャシ（コツ）	erhöhte Befestigungsanlage (der Ainu) in Nordjapan	fortified place (of the Ainu) in North Japan
60 **chausu-yama** 茶臼山	volkstümliche Bezeichnung für ein rundes Kofun, oder ein Schlüsselloch-Kofun mit kurzem Vorbau	popular name for a round or keyhole-type kofun with truncated wing
61 **chika-bo** 地下墓	Flachgrab	subterranean burial; flat grave
62 **chika-shiki-kō** 地下式壙	Schachtnische; Kurzstollen (zur Aufnahme einer Bestattung)	pit-cave; subterranean niche; shaft-niche (for burial)
63 **chika-shiki-yokoana** 地下式横穴 *see* **chika-shiki-kō**		
64 **chika-shiki-yokoana-shiki-sekishitsu** 地下式横穴式石室	Schachtnischen (grab)-kammer; Kurzstollen-(Grab-) Kammer	pit-cave burial chamber; subterranean niche burial chamber; shaft burial chamber
65 **chikkanmon** 竹管文	mit Bambusstäbchen hergestelltes Muster	bamboo stick impressions
66 **chinmon** 沈文 *see* **chinsen**		
67 **chinpin** 珍品	seltenes Fundstück	any rare object or find
68 **chinsen** 沈線	Rillen (verzierung)	grooved (ornament); grooves
69 **chippingu** チッピング	(Fein-) Retusche; Randretusche	chipping
70 **(sekifu no) chōbu** （石斧の）頂部	Nacken (eines Steinbeils)	butt (of a stone axe or adze)

71 **chōji-gashira** 丁子頭	Kopf eines *Magatama* mit einer Bohrung und von ihr ausgehenden Radialrillen	head, i.e. upper part, of a *magatama* with grooves radiating from the perforation
72 **chōjigata-kōen** 丁字形口縁	Quetschrand; Schienenkopfrand (Mundsaum)	flanged rim; flange lip; rail-head rim
73 **chōki** 彫器	Stichel	graver
74 **chōkoku-ki** 調刻器 =**sukurēpā**	seltener Ausdruck für Schaber	rarely used expression for scraper
75 **chokkō** 直口	gerade aufsteigender Mundsaum	plain rim on a straight wall
76 **chokkomon** 直弧文	chokko-Verzierung (ein für die Kofun-Zeit Japans charakteristisches Muster; eine Kombination von geraden und bogenförmigen Linien)	chokko design or motif (particular design in Kofun Period; intersecting diagonal and curved lines)
77 **chokusen-zoku** 直剪鏃	querschneidige Pfeilspitze	transverse arrowhead
78 **chōna** 手斧，釿	Dechsel; Dächsel; Querbeil	adze
79 **choppā** チヨツパー	*chopper*, 'Spalter'; 'Haumesser'	chopper; hand-adze
80 **choppingu-touru** チヨツピング・トウール	*chopping-tool* 'Haugerät'	chopping-tool
81 **chōsei** 調整	Zurichtung	fashioning; shaping; preparing
82 **[hi]chōsei-damen** （非）調整打面	(nicht)zugerichtete Schlagplattform	(un)faceted striking platform
83 **chōsei-hakuri** 調整剝離	Zurichtung	controlled flaking, chipping, trimming
84 **chōsei-gu** 調整具	Retuschierwerkzeug; Retuschiergerät	fabricator retouching tool
85 **[hi] chōsei-sekkoku** （非）調整石核	(nicht)zugerichteter Nukleus	(un)prepared core
86 **Chōsen-doki** 朝鮮土器	Koreanische Keramik (alter Ausdruck zur Bezeichnung eines Teiles der Iwaibe-, d.h. Sue-Keramik)	Korean pottery (obsolete expression for one kind of Iwaibe, i.e. Sue pottery)
87 **chōshi-zuka** 銚子塚	'Sakeflaschen-Hügel'; volkstümliche Bezeichnung für ein Schlüsselloch-Kofun mit langem und niedrigem Vorbau	mound shaped like a *sake* bottle: popular name for a keyhole-type kofun with long, low wing
88 **chōtō** 彫刀	Stichel	graver

89 **chōtō-kokumen** 彫刀刻面	Stichelfacetten	facets of a graver
90 **chōtsugai-hakuri** 蝶番剝離	a) Steil-, Stufenretuschierung b) Stichelschlag	a) hinge fracture b) graver blow
91 **chōzōyō no doki** 貯藏用の土器	Vorratsgefäß	storage vessel
92 **chūen-sōhō-fun** 中円雙方墳	Abart des *Zenpō-kōen-fun:* Kofun mit rundem Mittelteil und zwei einander gegenüberliegenden, gerade abgeschnittenen Bühnen; Doppelbühnen-Kofun	variety of the *zenpō-kōen-fun:* kofun with round central knoll and two opposite wings; double-winged kofun
93 **chūjō-kataha-sekifu** 柱状片刃石斧	a) dicknackiges geschliffenes Vierkantbeil mit schmalen Bahnen b) manchmal für *ishinomi* verwendet	a) quandrangular polished stone adze with narrow faces and thick butt b) sometimes used instead of *ishinomi*
94 **chūkan-doki** 中間土器	Zwischenkeramik (alter Ausdruck für Yayoi)	Intermediate Pottery (obsolete expression for Yayoi pottery)
95 **chūki** 中期	Mittel-, mittleres (chronologisch)	middle (referring to chronology)
96 **chūkō(-doki)** 注口土器	Ausguß(gefäß)	spout(ed vessel)
97 **chūkū-doban** 中空土版	hohle Tonkapsel (aus dem Pintadera entwickelt?)	pillow plaque (developed from the Pintadera?)
98 **chūsekisei** 沖積世	Alluvium	alluvial epoch
99 **chūsekki-jidai** 中石器時代	Mesolithikum	mesolithic age

D

100 **daen-oshigata-mon** 楕円押型文 *see* **kokuryū-mon**		
101 **daenjō-hando-akkusu** 楕円状 ハンドアツクス	ovaler Biface	ovate form of hand axe or biface
102 **dahaku** 打剝	Abschlagen	flaking
103 **daibun** 大分	Grobgliederung; Hauptgliederung	main division
104 **daiichikei-masei-sekifu** 第一型磨製石斧 *see* **nyūbōjō-sekifu**		
105 **daiishi-gihō** 台石技法	Amboßtechnik	anvil technique

106 dainikei-masei-sekifu 第二型磨製石斧 *see* **teikaku-shiki-masei-sekifu**		
107 daisankei-masei-sekifu 第三型磨製石斧 *see* **futogata-masei-sekifu**		
108 (dai) sekihō （大）石棚	Tisch-Dolmen	table dolmen
109 daitaikotsu-monyō 大腿骨文様	Schraubenschlüssel-ornament	wrench-shaped pattern
110 daitsuki (doki) 台付（土器）	Fuß. . . , . . . mit Standfuß (Höhe des Standfußes geringer als die des eigentlichen Gefäßes); vergl. *takatsuki*	footed (vessel); (height of the foot less than height of the vessel itself); cf. *takatsuki*
111 daketsu-sekki 打欠石器	*Chopper*, *Chopping tool*	chopper, chopping tool
112 dakiishi-sō 抱石葬	Körperbestattung mit Steinbeschwerung	burial with corpse weighted down by heavy stone(s)
113 damen 打面	Schlagplattform	striking platform
114 dan 段	a) Umbruch b) Innenkantung	a) break b) internal ridge
115 danshi 斷歯	Zahnfeilung (eine Methode der künstlichen Zahnverstümmelung)	filing of teeth (one method of tooth mutilation)
116 daryū 打瘤	Bulbus; Schlagbuckel *(siehe auch: uchikobu)*	bulb of percussion *(see also: uchikobu)*
117 daryū-kon 打瘤痕	Bulbusnegativ	negative bulb
118 dasei 打製	zugeschlagen (e [r, s])	chipped
119 denpa 伝播	Diffusion (von Kulturelementen, etc.)	diffusion (of culture elements, etc.)
120 depō デポー	Depot (funde)	depot, hoard
121 disuku ディスク	Scheiben-Biface	disc, discoid biface
122 dō (bu) 胴（部）	Bauch (eines Gefäßes)	belly (of a vessel)
123 doba 土馬	Tonpferdchen; Pferde-Haniwa	horse-shaped clay figurine horse-type haniwa

124 **doban** 土版	Tontäfelchen; Tonschildchen; Tonplakette	clay tablet; clay plaque
125 **dobingata-doki** 土瓶形土器	tönerne Ausgußflasche	earthenware flask (a kind of pouring vessel)
126 **dōboko** 銅矛	Bronze-Stichwaffe mit Schafttülle; Bronze-Spieß oder -Lanzenspitze	socketed thrusting weapon of bronze; socketed bronze pike or spearhead
127 **dōbutsu-dogū** 動物土偶	theriomorphe Tonfigur oder Tonstatuette	zoomorphic figurine in clay
128 **dōbutsu-haniwa** 動物埴輪	theriomorphe Haniwa	zoomorphic haniwa
129 **dōbutsu-ishō** 動物意匠	durchbrochene Metall-Schmuckbeschläge oder Zierplatten im Tierstil	metal panels with animal-style decoration carried out in openwork technique
130 **dōbutsusei-ibutsu** 動物性遺物	Gegenstände aus tierischem Material als Fundobjekte	objects or artifacts made of organic (animal) substance
131 **dōbutsu-totte** 動物把手	theriomorpher Henkel	zoomorphic handle or lug
132 **dochō** 土塚	(Erd-)Hügelgrab; (Gegensatz zu *sekichō*)	mound of earth over a grave; burial mound (in contradistinction to *sekichō*), grave mound
133 **dofun** *see* **dochō** 土墳		
134 **dogū** 土偶	Tonstatuette	clay figurine
135 **dōhan** 同笵	aus derselben Werkstatt stammend (z.B. Bronzeobjekt)	from the same manufacturing centre (e.g. bronze object)
136 **dōka**^{1} 同化	Assimilation; Angleichung	assimilation
137 **dōka**^{2} 銅戈	Bronze-Hackdolch; -Stabdolch, mit Plattangel	short-tanged bronze pick-dagger or halberd
138 **dōken** 銅劍	bronzene Stichwaffe mit Griffangel und doppelschneidigem Blatt	bronze thrusting weapon with tang and double-edged blade
139 **dōki-jidai** 銅器時代	Kupferzeit	Copper Age
140 **doki-zuka** 土器塚	Keramikhaufen: alte Bezeichnung aus der Meijizeit für einen gewöhnlichen Fundplatz (d.h. nicht Muschelhaufen)	'pottery mound': term used in Meiji era, to designate a non-shellmound site
141 **dokko-ishi** 獨鈷石	'Steinknebel' mit Einschnürung im Mittelteil (Funktion noch unbekannt)	dokko-stone: stone bar with constricted middle section (function still unknown)

142 dōko 銅鼓	Bronzetrommel	bronze drum
143 dō-kushiro 銅釧	Bronzearmreif	bronze bracelet
144 dōkutsu-iseki 洞窟遺跡	Höhlenstation	cave site
145 dōkutsu-riyō-iseki 洞窟利用遺跡 *see* **dōkutsu-iseki**		
146 dōkutsu-jūkyo 洞窟住居 *see* **dōkutsu-iseki**		
147 domen 土面	Tonmaske	clay mask
148 dorei 土鈴	Tonrassel	clay rattle
149 dorumen ドルメン	a) Dolmen b) manchmal fälschlich für *kumiawase-shiki-sekkan*	a) dolmen b) sometimes erroneously used for *kumiawase-shiki-sekkan*
150 dosei-mimikazari 土製耳飾	Ohrschmuck aus Ton	clay ear-ornaments
151 dosei-mozō-hin 土製模造品	Tonimitationen verschiedener Objekte, als Grabbeigaben verwendet	clay replicas of various objects used as grave goods
152 dosei-shaku 土製杓	Tonlöffel	pottery ladle or spoon
153 dōsekki-jidai 銅石器時代	Kupfersteinzeit	Copper-Stone-Age
154 dōshinen-mon 同心円文	konzentrisches Kreisornament	concentric circles
155 dōshinen-komon 同心円弧文 *see* **jūkomon**		
156 dosui 土錘	Tongewicht; Tonbeschwerer	clay weight
157 dōtaku 銅鐸	*Dōtaku* ('Bronzeglocke')	*dōtaku* ('bronze bell')
158 dō-zoku 銅鏃	bronzene Pfeilspitze	bronze arrowhead

E

159 eboshigata-ishi 烏帽子形石	*Eboshi*-förmiger steinerner Stützfuß für Gefäße (*Eboshi:* Kopfbedeckung des Hofadels, der Shintō-Priester, etc.)	foot-like vessel support made of an *eboshi*-shaped stone (*eboshi:* headgear worn by nobles in court dress, Shintō priests, etc.)

160	**eboshigata-sekki** 烏帽子形石器	*Eboshi*-förmiges Steinobjekt (je eine Aushöhlung am Boden und an der Vorderseite mit verbindender Bohrung)	*eboshi*-shaped stone object with sunken concave bottom and frontsides, perforated together
161	**eikanteki na ibutsu** 鋭感的な遺物	Schlüsselobjekt	indicative object; indicative find
162	**eguri** 抉り	Kerbe bei Werkzeugen, Waffen, etc.; *daher auch* z. B. *Italische Kerbe*	nick notch
163	**eguriiri-sekifu** 抉入石斧 *see* **ketsunyū-sekifu**		
164	**egurinuki-shiki-sekkan** 刳抜式石棺 *see* **kurinuki-shiki-sekkan**		
165	**ekagami** 柄鏡	Bronzespiegel mit langem Stielgriff	bronze mirror with long bar-shaped handle
166	**ekagami-shiki-kofun** 柄鏡式古墳	Kofun mit langgestrecktem Vorbau (Bühne), an die Form des *ekagami* erinnernd	kofun with extended wing, in shape similar to an *ekagami*
167	**ekagami-zuka** *see* **ekagami-shiki-kofun** 柄鏡塚		
168	**ekkusu-jō-mon** X状文	X-förmige Verzierung; X-Motiv	X-pattern; X-shaped ornament
169	**ekubo-mon** 笑くぼ文	Tiefstichverzierung; 'Grübchenornamentik'	pitted pottery; dimpled pottery
170	**enban-haritsuke-jō no hirasoko** 円磐貼付け状の平底	Bodenplatte eines Gefäßes; plattenförmige Standfläche	disc base applied to the vessel
171	**endō** 羨道	Zugang zu einer Grabkammer; 'Dromos'	corridor in a kofun; passage way, dromos
172	**endō-bo** 羨道墓	Ganggrab	corridor tomb
173	**endo-sukurēpā** エンド・スクレイパー	Klingenschaber mit Endretusche; Endschaber	end scraper
174	**engai-bo** *see* **torosu** 円蓋墓		
175	**enkeifu-mon** 円形浮文	(Ton-)Knoppernverzierung (Yayoi-Keramik)	small clay-knob ornament (Yayoi pottery)
176	**enkei-morigashira** 燕形銛頭	geflügelte Harpunenspitze	toggle-head harpoon with swallowtail barbs
177	**enkei-sekisō** 円形石掻	Diskusschaber	disc(-shaped) scraper

178	**enmoku** 莚目	Mattenmuster	mat impressions
179	**enmon** 羨門	Eingang zum Korridor einer Grabkammer im Kofun	entrance to the corridor or passage way leading to the main burial chamber in a kofun
180	**enpun** 円墳	runder Grabhügel	circular burial mound, similar to a bowl barrow
181	**Enshū-shiki-sekifu** 遠州式石斧 *see* **nyūbōjō-sekifu**		
182	**ensōtsuki-tsubo-gata-doki** 円窓付壺形土器	(Flasche, Topf, etc.) mit Saugloch	vessel with intentional perforation in the wall
183	**(han)ensuikei-sekkaku** （半）円錐形石核	(halb)konischer Nukleus	(semi)conical core
184	**Entō-doki** 円筒土器	Entō-Keramik (Gruppe in Nordjapan und Hokkaidō)	Entō pottery (group in North Japan and Hokkaidō)
185	**entō-haniwa** 円筒埴輪	Zylinder-Haniwa; Röhren-Haniwa	cylindrical haniwa; cylinder-shaped haniwa
186	**entō-kan** 円筒棺 *see* **hanisei-entō-kan**		
187	**entōkei-doki** 円筒形土器	zylindrisches Gefäß	cylindrical vessel
188	**entōkei-sekkaku** 円筒形石核	zylindrischer Nukleus	cylindrical core
189	**entō-sekifu** 円筒石斧 *see* **tenshikei-sekifu**		
190	**entōtsui-dahō** 円筒槌打法	Zylinderhammer-Technik	cylinder-hammer technique
191	**eorisu** エオリス	Eolith	eolith
192	**eridome** 襟止	Fibel	fibula
193	**Esu-ji-mon** S 字文	S-förmige Verzierung	S-like design
194	**Ezo-ana** *see* 蝦夷穴 **yokoana, yokana-shiki-sekishitsu**		

F

195	**-fū** 風	ein bestimmtes Gepräge, diese und jene Merkmale, zeigend	-style; -type

196	**fūdo** 封土	künstlicher Erdhügel; Erdaufschüttung	entirely or partly artificial elevation of earth; a mound
197	**fūdo-fun** 封土墳	*see* **dofun, dochō**	
198	**fuga-sō** 俯臥葬	Bestattung in Bauchlage	burial in face-down posture
199	**fukabachi** 深鉢	tiefe Schale; konischer Topf	deep bowl of any size; pot
200	**fukiishi** 葺石	Steinpflasterung auf dem Hang eines Kofun	paving stones on the slope of a kofun
201	**fukugōen** 複合縁	Nahtstelle	seam
202	**fukumen-dogū** 覆面土偶	Maskenstatuette; Tonstatuette mit aufgesetzter Maske	figurine with mask
203	**fukurobo** 袋穂	Tülle	socket
204	**fukusen-yamagata-mon** 複線山形文	Doppellinien-Zickzack	double-line zig-zag pattern
205	**fukushitsu** 複室	Zusatzkammern im Kofun	additional compartments (in a burial chamber)
206	**fukusōhin** 副葬品	Grabbeigaben	grave goods; funerary objects
207	**fumon** 浮文	plastische Kurvilinearverzierung durch aufgetragene Tonbänder	curvilinear raised ornament
208	**funagata-sekkan** 舟形石棺	bootförmiger Steinsarg	boat-shaped stone coffin
209	**funasō** 舟葬	*see* **shūsō**	
210	**funazoko-gata-sekki** 舟底形石器	'Kahnschaber': a) eine Art Kielschaber in Nordjapan b) *siehe: Shirataki-gata-funazoko-sekki*	boat-shaped stone implement: a) a kind of keeled scraper in North Japan b) *see: Shirataki-gata-funazoko-sekki*
211	**funbo** 墳墓	a) Hügelgrab b) Grab schlechthin	a) burial tumulus, mounded grave b) also generally: grave
212	**funchō** 墳塚	Grabtumulus	grave tumulus
213	**fundōgata-doseihin** 分銅形土製品	eingeschnürte Tonscheibe	segmented, disc-shaped clay tablet
214	**fundōgata-sekifu** 分銅形石斧	geigenförmiges Steinbeil; zugeschlagene Hacke mit Hüft-oder Halseinziehung	violin-shaped, pandurate stone axe or adze; chipped axe or adze with narrow waist or neck

215 **funkyū** *see* **fūdo-fun** 墳丘		
216 **funrō** 墳壟	großer Grabhügel	large burial mound; grave mound
217 **furēku** *see* **hakuhen** フレイク		
218 **furinto** フリント・燧石	Flint; Feuerstein	flint
219 **fuseikei-sekkaku** 不整形石核	unregelmäßiger (Rest-) Nukleus	irregular core
220 **fusen-amijō-mon** 浮線網状文	plastische Tonleistengitterung	lattice pattern of applied clay ribs; lattice-work cordoning
221 **fusen-mon** 浮線紋	Tonleistchenverzierung	raised design; cordoned design
222 **futago-zuka** *see* **sōenfun** 双子塚		
223 **futogata-hamaguriba-sekifu** 太型蛤刃石斧	stumpfnackiges Steinbeil mit *Hamaguri*-Schneide	axe with thick butt and clam-shaped edge
224 **futogata-masei-sekifu** 太形磨製石斧	schweres Linsenbeil mit *Hamaguri*-Schneide	heavy polished stone axe with lenticular section and clam-shaped edge

G

225 **gafu** 牙斧	Beilchen aus Eberhauer mit oder ohne Zwischenfutter	tusk adze hafted with or without sleeve
226 **gagū** 牙偶	Statuette aus Zahnbein (z.B. Stoßzahn eines Seesäugers)	statue or figurine made of a sea mammal's tusk
227 **gaigo-resseki** 外護列石	Stützsteine am Rande eines Hügelgrabes	buttress stones surrounding a kofun
228 **gaihan** 外友	ausgeweitet(er Mundsaum)	flaring (rim, mouth)
229 **gaikei** 外傾	trichterförmig angesetzt(er Mundsaum)	funnel-shaped, set-off (rim)
230 **ga-i** 臥位	liegende Stellung (Bestattungsform)	lying position (burial)
231 **gaitei-nendai** 概定年代	annähernde Datierung	approximate date
232 **ganban** 岩板	Steinstempel; Steinplakette; Ornamentplättchen aus Stein	stone tablet
233 **gangū** 岩偶	Steinstatuette	stone figurine
234 **gankō** *see* **kō** 環湟		

235 **ganmen-doki** 顔面土器	Gesichtsgefäß	vessel decorated with one or more masks
236 **ganmen-totte** 顔面把手	Maskengriff	handle in the form of a mask or with mask application
237 **ganpeki-ga** 岩壁畫	Felsbild	rock picture; parietal drawing
238 **gasei-magatama** 牙製勾玉	*magatama* (Krummperlen) aus Zähnen	comma-shaped tooth bead
239 **gasei-udewa** 牙製腕輪	Armband aus (Wildschwein) Hauern	bracelet made from boar's tusk
240 **gassō** 合葬	a) Doppelbestattung b) Bestattung mehrerer Personen	a) joint burial b) collective burials
241 **ga-zoku** 牙鏃	Pfeilspitzen aus Tierzähnen	tusk or tooth arrowhead
242 **geimen-dogū** 黥面土偶	Tonstatuette mit Imitation einer Gesichtstätowierung	clay figurine with simulated tattooing on the face
243 **geki** 戟	chinesische Hellebarde mit (getrennt angesetzter) Spitze und Rückendorn	Chinese halberd with (separately attached) pointed head and rear beak
244 **gekkeijuyōkei-pointo** 月桂樹葉形ポイント	Lorbeerblattspitze	point of a laurel leaf
245 **gen-jōmon** 原縄文	Proto-Jōmon	proto-Jōmon
246 **gensekki** *see* **eorisu** 原石器		
247 **genshi-jidai** 原史時代	Frühgeschichte: Zeit zwischen Urgeschichte (Bodenfundforschung) und Geschichte (schriftliche Eigenüberlieferung, historische Archäologie) mit dem Beginn in der Yayoizeit (Kultursubstrat) und dem Hauptgewicht auf der Kofun Zeit (Herausbildung des japanischen Staates)	Protohistoric Period: Intermediate period between prehistoric age and the age of recorded history, beginning in Yayoi age (cultural substratum) and having its main emphasis on Kofun Period (constitution of the Japanese State)
248 **genshi-jōmon-doki** 原始縄文土器	alte Bezeichnung des Typus Unteres Kitashirakawa (Frühjōmon)	obsolete name for the Lower Kitashirakawa pottery (early Jōmon)
249 **genshitsu** 玄室	Haupt(grab)kammer	main (burial) chamber
250 **giji-jōmon** 擬似縄文	Pseudo-Jōmonverzierung (durch Muschelrandabdrücke oder dergl. erzielt)	pseudo-Jōmon impressions produced with shell imprints or the like
251 **giryūsui-mon** 擬流水文	Pseudo-Mäander	pseudo-meander
252 **goseki** *see* 護石 **gaigo-resseki**		

253 **guratoā** グラトア	Klingenschaber, *grattoir*	*grattoir*
254 **gurēvā** グレイヴアー	Stichel	graver
255 **gyobutsu-sekki** 御物石器	geschliffener und verzierter, in der Mitte einseitig eingeschnürter Steinbarren mit einem zugespitzten Ende (Funktion unbekannt)	polished stone bar with carved decoration, having a depression on one side of the middle section and tapered butt-end (function or usage unknown)
256 **gyōga-sō** 仰臥葬	Bestattung in Rückenlage	burial of corpse lying on its back
257 **gyoku-fu** 玉斧	beilförmiger Schmuckanhänger	axe-shaped pendant

H

258 **hachi** 鉢	Schale (tiefer als Teller, Durchmesser weiter als Höhe)	bowl broader than it is high
259 **hachi-no-su-ishi** 蜂巣石	Grübchenstein (Stein mit mehreren kleinen Eindellungen; als Widerlager für Feuerbohrer oder dergl. verwendet?)	dimpled stone (i.e. with several irregularly arranged pits; used as an abutment for the fire-drill or the like?)
260 **hadae** 肌	Gefäßoberfläche	surface (of a vessel)
261 **hagoitagata-sekishitsu** 羽板形石室 *see* **ryōsodegata-sekishitsu**		
262 **haiseki-ikō** 配石遺構	Steinsetzung jeder Art	any kind of stone arrangement
263 **hajō-mon** 波状文	Wellenlinienverzierung; Wellenband	wave-like ornament
264 **hajō-kōen** 波状口縁	gelappter Mundsaum	lobed rim
265 **hakeme-mon** 刷毛目文	Besenstrich (muster)	ornament looking as if scraped with a brush
266 **hakka-seki** 發火石 *see* **hachi-no-su-ishi**		
267 **hakkutsu** 發掘	Ausgrabung	excavation
268 **hakkutsu-kō** 發掘溝	Graben	trench

269	**hako-shiki-sekkan** 箱式石棺 *see* **kumiawase-shiki-sekkan**		
270	**hakuhen** 剝片	Abschlag	flake
271	**hakuhen-hakuri** 剝片剝離	(freies) Abschlagen in Flachretuschtechnik	free flaking; feather-edge flaking
272	**hakuhen-sekki** 剝片石器	Abschlaggerät	flake tool
273	**hakuri** 剝離	a) Abschlagen b) Zurichtung	flaking
274	**hakuri-kaku** 剝離角	Winkel zwischen Schlagplattform und Ventralseite	angle between striking platform and main flake surface
275	**hakuri-kon** 剝離痕	Abschlagnegativ	flake scar
276	**hakuri-men** 剝離面	Ventralseite eines Abschlags oder einer Klinge; Bulbusfläche	main flake surface of a flake or blade
277	**hakusō** 薄葬	Beisetzung und Bestattung mit geringem Aufwand	plain burial
278	**hamaguri-ba** 蛤刃	parabolisch geschliffene Schneidenfläche eines Steinbeils (einer Steinaxt)	parabolically-ground edge(s) of a stone axe or adze; clam-shaped edge
279	**hando.azu** ハンド・アズ *see* **choppā**	('Hackbeil')	(hand-adze)
280	**hando.akkusu** ハンド・アックス	Faustkeil	hand-axe
281	**hando.doriru** ハンド・ドリル *see* **ishikiri**		
282	**hanisei-entō-kan** 埴製円筒棺	großer Tonzylindersarg (Einzelstück oder zwei an den Mündungen zusammengesteckt)	cylinder-shaped large clay coffin (single, or two mouth to mouth)
283	**hanisei-makura** 植製枕	Kopfauflage aus Ton (für den Leichnam im Sarg)	clay head-rest (in the coffin)
284	**haniwa** 埴輪	Sammelname für alle gebrannten Rohtonobjekte, die um ein Kofun herum, manchmal auch auf demselben, in einer Reihe, oder in mehreren Reihen gestaffelt, aufgestellt sind	collective term for the unglazed baked clay objects placed in one or more rows around, or on the slopes of, a kofun
285	**haniwa-dogū** 埴輪土偶 *see* **jinbutsu-haniwa**		

286 **haniwa-entō-kan** 埴輪円筒棺	Haniwa-Sarg (d.h. ein Zylinder-Haniwa wird direkt als Sarg verwendet)	haniwa coffin (i.e. a cylindrical haniwa used as coffin)
287 **haniwa-entōkei-kan** 埴輪円筒形棺	Tonsarg in Form einer Zylinder-Haniwa-Nachahmung	large clay coffin in the form of a cylindrical haniwa
288 **haniwa-jinbutsu-zō** 埴輪人物像 *see* **jinbutsu-haniwa**		
289 **haniwa-kan** *see* 埴輪棺 **haniwa-entō-keikan**		
290 **hanniku-bori** 半肉彫	Ausschneiden (von Tonmasse aus der Gefäßoberfläche etc. zur Verzierung)	carving, excising (technique of decorating the surface of a vessel, etc.)
291 **hansai-chikkan-mon** 半截竹管文	Doppelstrichverzierung; Parallelstrichverzierung	split bamboo impressions; double prong incisions
292 **hanshutsu-ibutsu** 伴出遺物 *see* **kyōzon-ibutsu**		
293 **hari** 張り	Einziehung	constriction
294 **hasen** 波線	Wellenlinie	wave line
295 **hashira(-no-)ana** 柱穴	Pfostenloch	post hole
296 **ha-tsubushi** 刃潰し	Abstumpfen (des Klingenrückens)	blunting (the back of a blade)
297 **heichi-jūkyo(shi)** 平地住居（址）	oberirdischer Wohnplatz	surface dwelling (site)
298 **heikō-jōkō-ken** 平行条溝剣	Stichwaffe (Dolch) mit Längskehlungen parallel zur Mittelrippe	thrusting weapon (dagger) with longitudinal channels on the blade beside the midrib
299 **heiretsu-hakuri** 並列剝離	Serienabschlag (technik)	ripple chipping; serial flaking
300 **heitan-chōtō** 平坦彫刀	a) flacher (Klingen-) Stichel b) Kantenschlagstichel	flat graver
301 **heitan na kōen** 平坦な口縁	gerader, gerade abgeschnittener, Mundsaum	straight, horizontal rim
302 **hekiga** 壁畫	Wandmalerei	wall painting; parietal painting
303 **hennen** 編年	zeitliche Abfolge; relative Stellung der Kulturerscheinungen zueinander, im Sinne der relativen Chronologie; relativchronologische Datierung	chronological sequence, succession; subsequent, successive position of culture elements

304 **henpei-kataha-sekifu** 扁平片刃石斧	Flachbeil	flat adze
305 **henryōkei-sekki** 偏菱形石器	Rhomboid (Mikrolith)	rhomboid (microlith)
306 **heragaki-mon** 箆描文	Spatelverzierung; Spatelornament	spatula engraved design spatula scraping ornament
307 **herajō-mokki** 箆状木器 *see* **herajō-mokusei-hin**		
308 **herajō-moku(sei)-hin** 箆状木（製）品	schwertklingenförmiges Holzinstrument (Funktion unbekannt)	wooden instrument in the shape of a sword blade (function unknown)
309 **herajō-sekki** 箆状石器 *see* **ishibera**		
310 **herame** 箆目	Spatelstreichspuren	spatula scraping marks
311 **hera-okoshi** 箆起	Technik des Gestaltens der Keramik mit einem Spatel	technique of shaping pottery by means of a spatula
312 **hi** 樋	Hohlkehle (auf einer Klinge)	channel (on a blade); longitudinal fluting
313 **hikō (shita kōen)** 肥厚	Verdickung (des Gefäßmundsaums)	thick(ened rim); heavy, bulky (rim of a vessel)
314 **himosen-mon** 紐線文	Tonleistenverzierung; Tonrippenverzierung	clay ribbon (ornament); clay ridges
315 **hirabuchi** 平縁	Flachrand (eines Bronzespiegels)	plane border (of a bronze mirror)
316 **hiradama** 平玉	(elliptische) Flachperle mit Längsdurchbohrung	(elliptic) flat bead with longitudinal perforation
317 **hiragata-dōken** 平形銅剣	flache Bronzeklinge mit zwei seitlichen Ärmchen und rudimentärer Schaftangel: degenerierte Mischform mit Elementen des *dōken* und *dōboko*	thin bronze blade with two lateral projections and rudimentary tang: degenerate hybrid between *dōken* and *dōboko*
318 **hirane** 平根	frühgeschichtliche eiserne Pfeilspitze mit flachem Blatt	iron arrowhead with thin blade (protohistoric)
319 **hirazoko** 平底	Flachboden (eines Gefäßes)	flat base (of a vessel)
320 **hirosaki-dōboko** 廣鋒銅鉾	*dōboko* mit breitem Blatt; breite Tüllenspitze	*dōboko* with wide blade
321 **hirosaki-dōka** 廣鋒銅戈	Bronze-Stabdolch, -Hackdolch mit breitem Blatt	bronze halberd, pick-dagger, with wide blade
322 **hisagogata-doki** 瓢形土器	kürbisförmige Tonflasche	gourd-shaped vessel
323 **hisagogata-fun** 瓢形墳	kürbisförmiges Kofun	gourd-shaped kofun

324 **hisago-zuka** ひさご塚 *see* **sōenpun**		
325 **hoādo** ホアード	Depot	hoard
326 **hōchō** 庖刀	'Erntemesser' (aus Muschelschale)	knife made of shell, reaper
327 **hōdan-kei** 砲彈形	der gebauchte Konus	bulging conical (vessel)
328 **hōdo** *see* **fūdo** 封土		
329 **hōdo-fun** 封土墳 *see* **fūdo-fun**		
330 **hōfun** 方墳	viereckiges Kofun (mit Plattform)	(terraced) square-plan kofun
331 **hohaku** 補剝	Retusche	retouch
332 **hōjō-mimikazari** 棒狀耳飾	Ohrpflock	ear-peg or plug
333 **hōkajō-funbo** 蜂窩狀墳墓 *see* **torosu**	(Bienenkorbgewölbe-Grab)	(beehive tomb)
334 **hōkaku-kiku-mon-kyō** 方格規矩文鏡	TLV-Spiegel (Bronzespiegel mit winkeligen Motiven wie die Buchstaben T, L und V, die um ein zentrales Quadrat herum angeordnet sind)	TLV-mirror (bronze mirror with pattern consisting of angular figures like the letters T, L and V, arranged around a centrally placed square)
335 **hōkaku-oshigata-mon** 方格捺形文	Vierecks-Rollmuster	rectangular cell rouletting
336 **hōkaku-sekifu** 方角石斧	Vierkantbeil	quadrangular adze or axe
337 **hōka-seki** 蜂窩石 *see* **hachi-no-su-ishi**		
338 **hōkei-doki** 方形土器	Vierkantbecher; Vierkantschale	square cup
339 **hoko** 鉾，矛	Spieß- oder Lanzenspitze mit Schafttülle	socketed pike- or spearhead
340 **honebera** 骨箆	Knochenspatel	bone spatula
341 **honegiri** 骨錐	Knochenahle; Bohrer aus Knochen	bone gimlet
342 **honegushi** 骨櫛	Knochenkamm	bone comb
343 **hone-kuwa** 骨鍬	Knochenhaue	bone hoe
344 **honemori** 骨銛	Knochenharpune	bone harpoon

345	**horinuki-shiki-** 彫抜式石棺 [**sekkan** *see* **kurinuki-shiki-sekkan**		
346	**hosaki** 穂先	(Klingen-)Spitze	point (of a blade)
347	**hōshajō-rekkon** 放射狀裂痕	radiale Reißspuren; Radialfissuren	radial shatter-fissures
348	**hōshasei-tanso-nendai-sokutei** 放射性炭素年代測定	Radiokarbondatierung	radiocarbon dating
349	**hoshū** *see* **hohaku** 補修		
350	**hosogata-dōken** 細形銅劍	*dōken* mit schmalem Blatt; schlanker Griffangeldolch	*dōken* with narrow blade; tanged bronze dagger with slender blade
351	**hosogata-kudatama** 細形管玉	sehr enge Röhrenperle	very narrow tubular bead
352	**hotategai-shiki-zenpō-kōenfun** 帆立貝式前方後円墳	Kofun mit kurzem Vorbau (kurzer Bühne)	kofun with truncated wing; scallop-shaped kofun
353	**hyōdo** 表土	Oberflächenmaterial	top soil
354	**hyōga-jidai** 冰河時代	Eiszeit	Ice Age; glacial epoch
355	**hyōjun-ibutsu** 標準遺物	1) *Keramik:* Modell-Keramik, Exemplar-Keramik: keramisches Fundmaterial, das ohne Rücksicht auf durchführbare Feingliederung die Gesamtgattung repräsentiert und vielfach nach dem ersten oder dem jeweils repräsentativsten Fundplatz benannt ist (z.B. Yayoi-, Yangshao-, Lungshan-Keramik) 2) *Lithische Industrie, Metallobjekte, etc.:* Leitobjekt, Leitfund: Fundmaterial, das typenmäßig, zeitlich und kulturell dem einer Typenstation eindeutig an die Seite gestellt werden kann	1) *pottery:* model pottery, sample pottery: pottery sample substantially exemplifying the whole of its kind without respect to subdivisions (such as types, etc.); in many cases named after the site of discovery or the site yielding most characteristic specimens (e.g. Yayoi-, Yangshao-, Lungshan-pottery) 2) *pre-ceramic industries, metal objects, etc.:* guide object: a find corresponding by its typology and chronological and cultural position to a specific type object

356 **hyōjun-iseki** 標準遺跡	a) Modellstation: jener Fundplatz, der durch seine Lage und Beschaffenheit sowie durch den Umfang seines Fundmaterials den (Gesamt-)Habitus der betreffenden Kultur am deutlichsten erkennen läßt (z.B. Karako, Toro für Yayoi) b) Musterstation: Fundplatz, der als Fundmaterial sog. *hyōjun-ibutsu* 1) oder 2) ergibt (Keine einheitliche Auffassung in der japanischen Fachwelt)	a) standard site: a site which gives, in comparison to others, the best understanding of the total culture in question by its location, outer appearance, inner structure and the scope of the material yielded (e.g. for Yayoi: the Karako and Toro sites) b) model site, sample site: a site yielding *hyōjun-ibutsu* 1) or 2) (No agreement among Japanese scholars)
357 **hyōki** 氷期	Glazial	glacial
358 **hyōmen-saishū** 表面採集	Aufsammeln von Oberflächenfunden	collecting (prehistoric) material from the soil surface; surface find
359 **hyōshiki-ibutsu** 標式遺物	1) *Keramik:* Typus: eine keramische Formengemeinschaft, die als Subordnung einer Keramikgattung eine formal, lokal und zeitlich begrenzte Ausprägung, einen Typus, derselben repräsentiert 2) *lithische Industrie, Metallobjekte, etc.:* Typenobjekt: eine in Form, räumlicher Verbreitung und zeitlicher Stellung klar bestimmbare Type, an die gleiche Funde von anderen Fundplätzen zur Bestimmung angeschlossen werden können	1) *pottery:* type pottery: a pottery type clearly distinguishable from others by shape, local distribution and chronological position, forming a subdivision within a larger unit 2) *pre-ceramic industries, metal objects, etc.:* type object: a find or object recognized as a normal type with specific shape, local distribution and chronological position, used for ascertaining the nature and position of similar finds from other sites
360 **hyōshiki-iseki** 標式遺跡	Typenstation, d.h. Fundplatz, der sog. *hyōshiki-ibutsu* ergibt	type site or station, i.e. a site yielding *hyōshiki-ibutsu* 1) and 2)

I

361 **ibojō-(ko) tokki** 疣状（小）突起	(kleine) Knubben	(small) knobs; bosses

362	**ibutsu** 遺物	Funde	finds; relics
363	**ibutsu-hōgansō** 遺物包含層	fündige, fundführende Strate	layer containing cultural remains
364	**ibutsu-sanpuchi** 遺物散布地	Gebiet der Fundverteilung; Fundstreugebiet	range or area of dispersion (of potsherds, etc.)
365	**ichiji-hakuri** 一次剝離	a) Primärabschlag b) Rohretusche	primary flaking
366	**ichimatsu(-monyō)** 市松（文様）	Schachbrettmuster; Würfelmuster	chequer pattern; check-stamp pattern
367	**iegata-sekkan** 家形石棺	hausförmiger Steinsarg	house-type stone coffin
368	**igashiragata-ishizuchi** 猪頭形石槌 *see* **gyobutsu-sekki**		
369	**igeta-mon** 井桁文	eine Art enger gitterförmiger Rollmusterverzierung	narrow lattice-work rouletting
370	**igo** 以後	nach, post (Vorhergegangenes ausschliessend)	indicating a *terminus post quem* (excluding antecedent facts)
371	**ikkatsu-ibutsu** 一括遺物	Depot (fund)	hoard
372	**ikō** 以降	ab (Vorhergegangenes einschließend)	indicating a *terminus a quo* (including antecedent facts)
373	**inkoku-mon** 陰刻文	aus dem Ton der Gefäßoberfläche herausgeschnitzte Verzierung	excised ornament (i.e. excised from the surface of the vessel)
374	**irigumi-mon** 八組文	Verzierung aus ineinander verhakten Elementen	design composed of interlocked ornamental elements
375	**iseki** 遺跡	Fundplatz	site
376	**ishibera** 石箆	trapez- bis spatelförmiger Abschlagschaber; oft fälschlich für 'racloir' verwendet	trapeziform or spatulate flake-scraper; often erroneously used to designate a *racloir*
377	**ishi-bōchō** 石庖丁	Stein(-Ernte-)messer, Frauenmesser	stone knife, rice reaper made of stone, woman's knife
378	**ishidama** 石彈子	Schleuderstein	sling stone
379	**ishidana** 石棚	Nische in der Grabkammer eines Kofun	niche in the chamber of a kofun
380	**ishigama** 石鎌	Steinsichel	stone sickle
381	**ishikakoi-roato** 石圍爐址	von Steinen umgebene Feuerstelle (z.B. in einer Wohngrube)	fireplace enclosed by stones (e.g. in a dwelling pit)
382	**ishikiri** 石錐	Sammelbezeichnung für: paläolithische Bohrer und neolithische Ahlen	collective term for palæolithic drills and neolithic awls

383 **ishi-kogatana** 石小刀	a) zugeschlagenes Steinmesser als Nachahmung von Metallmesserklingen b) manchmal für *ishisaji* verwendet c) Schmalklinge	a) chipped stone imitation of metal knife blades b) sometimes used instead of *ishisaji* c) blade
384 **ishikuwa** 石鍬	'Steinhaue': zugeschlagenes oder geschliffenes spatelförmiges Steingerät	stone hoe: spatulate implement of chipped or polished stone
385 **ishikuzu** 石屑	Absplisse (Abfall bei der Steinbearbeitung)	chips (waste material from flaking)
386 **ishimakura** 石枕	steinerne Kopfauflage im Sarg; nicht zu verwechseln mit *sekichin*	stone head-rest in the coffin; not to be confused with *sekichin*
387 **ishinokogiri** 石鋸	'Steinsäge'; gezähntes Steingerät	stone implement with serrated edge, 'saw', 'sickle-tooth'
388 **ishinomi** 石鑿 *see* **nomigata-sekifu**		
389 **ishisaji** 石匙	Griffknopfschaber	stemmed scraper
390 **ishisara** 石皿	Reibplatte	quern consisting of one stone slab; saddle quern
391 **ishitsubo** 石壺	Steintopf	stone vase
392 **ishiusu** *see* 石臼 **ishisara**		
393 **ishiyari** 石槍	steinerne Speerspitze oder Steindolch	stone spearhead or dagger
394 **ishizuchi** 石槌	Hammerstein; Klopfstein	hammer-stone
395 **ishizuki** 石突	Lanze: beschlagenes Schaftende Stock: Zwinge Schwertscheide: Ort	spear: butt end staff: ferrule scabbard: chape, finial
396 **iwaibe** 祝部	Iwaibe-Keramik; 'Zeremonialgeschirr' (unrichtige Deutung)	Iwaibe pottery; ceremonial ware (incorrect interpretation)
397 **iwakage-iseki** 岩陰遺跡	*Abri* als Fundplatz	rock-shelter site, *abri* site

J

398 **jiban** *see* **jiyama** 地盤		
399 **jidai-kubun** 時代區分	Periodisierung	periodization
400 **jiku** 軸	Schaftangel einer Lanze	tang of a spearhead

401 **jinbutsu-haniwa** 人物埴輪	anthropomorphe Haniwa	anthropomorphic haniwa
402 **jinbutsu-ishō** 人物意匠	anthropomorphe Plastik auf Gefäßwänden, Deckeln, etc.	anthropomorphic plastic figures or images on vessel walls, lids, etc.
403 **jinki** 刃器	(Schmal-)Klinge als Gerät; Klingengerät	blade used as tool; blade implement
404 **jinkō-ibutsu** 人工遺物	Artefakte; Fundobjekte	artifacts; culture relics
405 **jinmen-totte** 人面把手	Maskenhenkel; Griff oder Henkel mit menschlicher Gesichtsdarstellung	handle with anthropomorphic mask
406 **jinruigaku-senshi-kōkogaku** 人類學先史考古學	allgemeine Anthropologie mit physischer und kultureller Anthropologie und Bodenfundforschung	anthropology, including physical and cultural anthropology and prehistoric archæology
407 **jintai-doki** 人體土器	anthropomorphes Gefäß	anthropomorphic vessel
408 **jisei (bunka)** 自生（文化）	bodenständig(e Kultur)	indigenous (culture)
409 **jisei** *see* **kasshagata-mimikazari** 耳栓	Ohrpflock	ear-peg
410 **jitō** 耳璫	Ohrpflock in China (meist rollenförmig)	ear-peg in China (in most cases pulley-shaped)
411 **jiyama** 地山	das Liegende, die unteste Schicht, der gewachsene Boden	undisturbed subsoil
412 **jōdai (bunka)** 上代（文化）	(Kultur der) Antike	antique culture; classical antiquity
413 **jōen-kahō-fun** 上円下方墳	Kofun mit quaderförmiger Basis und runder Aufschüttung	kofun with dome-shaped knoll on a square base
414 **jōmon-gentai** 繩文原體	Sammelname für mattenartige Stoffe, die früher als Mittel zur Erzeugung der Jōmon-Verzierung angesehen wurden; *vergl. dazu: kaiten-jōmon*	collective term for mat-like fabrics, previously supposed to be the means of producing Jōmon ornamentation; cf. *kaiten-jōmon*
415 **jōryūtai-mon** 繩隆帶文	Jōmonverzierung auf erhöhter Tonauflage	raised zones with Jōmon pattern
416 **jōseki-mon** 繩蓆文	Matten (-abdruck-) muster (früherer Name für Jōmon)	mat impressions (original term for Jōmon)
417 **jōsen-mon** 條線文	(senkrechte) Rißverzierung	(upright parallel) hatchings
418 **jūfuku** 重複	Überlappung (zweier Kulturen)	overlapping (of two cultures)

419 **jūjikei-sekki** 十字形石器	a) zugeschlagenes Steinobjekt in Kreuzform b) manchmal für *tatō-sekifu* verwendet	a) cross-shaped and chipped stone object b) sometimes used instead of *tatō-sekifu*
420 **jūkei-dosei-hin** 獸形土製品 *see* **dōbutsu-dogū**		
421 **jūketsu-mon** 紐結文	Schnurknotenabdruck (ohne Walzbewegung)	knot impressions, made without rolling the knot over the surface of the vessel
422 **jūkiretsu** 縦龜裂	Fissuren, Reißlinien (auf der Bulbusfläche)	fissures left on the main flake surface after flaking
423 **jūko-mon** 重孤文	konzentrisches Halbkreismuster	half concentrics; concentric semicircles
424 **jūkyo-shi** 住居址	Wohnplatz	dwelling place
425 **jūmen-totte** 獸面把手	Tiermaskenhenkel	handle with animal mask
426 **jun-dōki-jidai** 純銅器時代	'Reinkupferzeit' (selten gebraucht; gleichbedeutend mit *kinseki-heiyō-jidai*)	'pure Copper Age' (rarely used; stands for *kinseki-heiyō-jidai*)
427 **jū-sō** 重葬	überlagernde Bestattung	cumulated burial

K

428 **ka** 戈	chinesische Helleberde mit oder ohne Schaftloch und Rückendorn; für Japan *siehe: dōka, tekka*	Chinese halberd with or without shaft hole and rear spike; for Japan *see: dōka, tekka*
429 **kaeri** 逆鈎・鐖	Widerhaken (bei Harpunen, etc.)	barb (on a harpoon, etc.)
430 **kafun-bunseki** 花粉分析	Pollenanalyse	pollen analysis
431 **kago-me-mon** 籠目文	Korbmaschen-Gitterung	net-mesh pattern
432 **kaibaka** 貝墓	Bestattung mit Muschelschüttung (in der Grabgrube); Bestattung mit Muschelbedeckung	burial with shell filling (in the grave pit)
433 **kaibōchō** 貝庖丁	Muschelmesser	shell knife; reaper made from shell
434 **kaidan-bori** 階段掘	Terrassengrabung	terrace excavation
435 **kaidan(jō)-hakuri** 階段（狀）剝離	a) Stufenretusche b) Stichelschlag	a) step flaking, resolved flaking b) graver blow
436 **kaigara-akkon** 貝殼圧痕	Muscheleindrücke; Muschelabdruckmuster	shell imprints; pattern impressed by shell

437	**kaigarachō-akkonmon** 貝殼頂圧痕文	Muschelkopfabdrücke	imprints made with the apex of a shell
438	**kaigara-fukuen-mon** 貝殼腹縁文	Muschelrückeneindrücke	impressions made with the back of a shell
439	**kaigara-jōkon** 貝殼条痕	Muschelstreichspuren	scraping with a shell
440	**kaigarajō-rekkon** 貝殼狀裂痕	muschelige Reißstellen (zusammen mit konzentrischen Kreisen und Wellen auf der Ventralseite eines [Feuerstein-] Abschlages)	conchoidal fracture (among rings and waves on the main flake surface)
441	**kaigara-mon** 貝殼文	jede Art der Gefäßverzierung, die mit Hilfe einer Muschelschale erzeugt wurde	any kind of shell-made decoration
442	**kai-jakushi** 貝杓子	Muschellöffel mit extra angesetztem Stiel	ladle made of shell
443	**kaikaku-bo** *see* **kaibaka** 貝槨墓		
444	**kai-kushiro** 貝釧	Muschelarmreif, aus einer durchbohrten Muschelschale hergestellt; *vergl.: kaiwa*	bracelet made of shell; perforated shell used as bracelet; *see also: kaiwa*
445	**kaisaji** 貝匙	Muschelschaber; Muschelspatel	scraper made of shell; spatula made of shell
446	**kaisei-hin** 貝製品	Objekte und Geräte aus Muschelschalen	objects and tools made of shell
447	**kaishin-kaitai** 海進海退	Meerestransgression und -regression	marine transgression and regression
448	**kaisō** 貝層	Muschelschicht	shell bed; shell stratum
449	**kai-sō** 改葬	mehrstufige Bestattung; nochmalige Bestattung; Sekundärbestattung	a) 'secondary' burial b) reinterment elsewhere after bone-washing, etc.
450	**kaiten-jōmon** 回転縄文	die eigentliche durch Schnurabrollung hergestellte Jōmonverzierung	true Jōmon ornament, obtained by cord rouletting
451	**kaiten-ōnatsu-mon** 廻転押捺文	a) *siehe: (kaiten-) oshigata-mon* b) *siehe: yoriito-mon*	a) *see: (kaiten-) oshigata-mon* b) *see: yoriito-mon*
452	**kaiten-oshigata-mon** 回転押型文	Rollmuster, mit geschnitztem Stab erzeugt; Stabrollverzierung	engraved dowel rouletting; roller pattern(produced with carved stick)
453	**kaiwa** 貝輪	Muschelring; durchbohrte Muschel, in vielen Fällen kein Armschmuck; *vergl.: kai-kushiro*	shell-ring, i.e. perforated shell, in many cases not used as bracelet; cf. *kai-kushiro*
454	**kai-zoku** 貝鏃	Muschelpfeilspitze	arrowhead made of shell

455 **kaizuka** 貝塚	Muschelhaufen	shell mound; kitchen midden
456 **kaizuka-doki** 貝塚土器	Muschelhaufen-Keramik (veraltete Bezeichnung; früher zur Unterscheidung von Yayoi gebraucht)	shell-mound pottery (obsolete designation of Jōmon pottery)
457 **kaizuka-jinkotsu** 貝塚人骨	Muschelhaufenbestattung oder allgemein: Menschenknochenfunde in Muschelhaufen	shell-mound burial; or generally: human bones found in a shell mound.
458 **kajō-mon** 渦状文	Wirbelmuster	whirl design; spiral motif
459 **kakki** 角器	Hornobjekt	object made of horn
460 **kakō** 加工	Bearbeitung	treating; processing; finishing
461 **kaku** 槨	Sarkophag; Außensarg	sarcophagus
462 **kakufu** 角斧	Geweihpickel	pick made from an antler
463 **kakugata-doki** 角形土器	Mehreckengefäß	angulate vessel
464 **kakutō-doki** 角筒土器	Vierkantbecher	square beaker
465 **kama** 鎌	eine Art Sichel	kind of sickle
466 **kamaboko-buchi** 蒲鉾縁	Wulstrand (eines Bronzespiegels)	swollen edge, torus border (of a bronze mirror)
467 **kamado** 竈	a) Feuerstelle in Wohngrube, meist mit Rauchabzug; Kochherd b) *siehe: kamadogata-doki*	a) fireplace of a dwelling-pit, for cooking, usually with a smoke escape b) *see: kamadogata-doki*
468 **kamadogata-doki** 竈形土器	kleiner keramischer Herd mit seitlicher Feuerungsöffnung; 'Dämpfer'	portable pottery cooking-hearth with open firing hood; 'pottery steamer'
469 **kamagata-doki** 釜形土器	Kragentopf (mit verdicktem vorragendem Hals)	collared pot (with thickened, overhanging neck)
470 **kame** 甕	großer weithalsiger Topf	pot-bellied jar
471 **kamekaburi-sō** 甕被葬	Bestattung mit Gefäß-Kopfschutz (d.h. Sicherung des Schädels durch ein darübergestülptes Gefäß)	burial with a vessel protecting the corpse's head
472 **kame-kan** 甕棺	Bestattungsgefäß	burial jar
473 **kame-sō** 甕葬	Gefäßbestattung	jar burial

474 **kan** 棺	Sarg, d.h. der den Leichnam aufnehmende Behälter	coffin
475 **kan-dai** 棺台	Sargauflage; Sargstütze	coffin support
476 **kan-hyōki** 間冰期	Interglazial	interglacial (period)
477 **kanjō-doki** 環状土器	Ringgefäß; Ringflasche	doughnut-shaped vessel
478 **kanjō-resseki** 環状列石	Steinkreis	stone circle
479 **kanjō-sekifu** 環状石斧	a) Steinring mit scharfer Außen- (manchmal auch Innen-) kante b) Scheibenkeule	a) flat stone ring with a sharp outer (in some cases also inner) edge (used as mace-head?) b) discoidal mace-head
480 **kanjō-sekiri** 環状石離 *see* **kanjō-resseki**		
481 **kanjō-totte** 環状把手	a) Ring-, Ösenhenkel b) horizontaler Bandhenkel	a) ringlike handle b) horizontal arch-like handle
482 **kanseki**^{1} *see* 冠石 **sekkan**		
483 **kanseki**^{2} *see* 環石 **kanjō-sekifu**		
484 **kansetsu-dahō** 間接打法	indirekte (Schlag-) Technik	indirect technique of percussion, punch technique
485 **kansō** 棺葬	Sargbestattung	burial in a coffin; burial containing a coffin
486 **karakusa-mon** 唐草文	verschlungenes Pflanzenmuster; Arabesken	intertwining floral pattern
487 **kasō** 家葬	Haussargbestattung, Beisetzung in hausförmigem Stein- oder Tonsarg	burial in a house-shaped or roofed coffin made of stone or clay
488 **kasshagata-mimikazari** 滑車形耳飾	Sammelname für alle Arten von rädchen-, rollen- und felgenförmigen Ohrpflöcken in Japan; *vergl. dazu: jitō*	collective term for all kinds of pulley- and felloe-shaped ear-pegs in Japan; cf. *jitō*
489 **kasū-nendai** 仮數年代	Sequenzdatierung	sequence date
490 **kata-eguri** 片抉	mit einseitiger Schulter ausgestattet; einseitig gekerbt	one-shouldered; notched; nicked
491 **kataha** 片刃	a) Schwert: Einschneidigkeit b) Beil: der Pultschliff eines Querbeiles c) Chopper-Schneide	a) sword: single edge b) adze: bevelled edge c) chopper edge

492 **katakuchi-doki** 片口土器	Schnabelgefäß; Gefäß mit Schneppe	vessel with a lipped rim; bowl with lip
493 **katamen-chōsei** 片面調整	unifaziale Zurichtung	unifacial (monofacial) shaping or retouch
494 **kata-mon** 型文	plastische Stempelverzierung; Reliefstempelung	relief stamping; embossed stamping
495 **katasodegata-seki-shitsu** 片袖型石室	Ganggrabkammer mit der Gangmündung an einer Ecke der Stirnwand; asymmetrisches Ganggrab	stone-built burial chamber with the entrance from the corridor at one corner of the front wall; asymmetrical passage grave or corridor tomb
496 **katatsuki** 片坏	Schüssel oder flache Schale ohne Deckel	small dish without lid
497 **katei-ōnyū(-shiki-masei-sekizoku)** 下底凹入（式磨製石鏃）	(geschliffene Steinpfeilspitze mit) eingezogene(r) Basis	(polished stone arrowhead with) hollow base
498 **katazukuri** *see* **mōrudingu** 型造リ		
499 **katsuobushigata-gyokki** 鰹節形玉器	halbelliptischer Schmuckanhänger mit Bohrung	semi-elliptic pendant with perforation
500 **katsuobushi-monyō** 鰹節	'Bonitfisch-Verzierung': Gefäßverzierung, bestehend aus Ketten von S-Figuren mit hahnenkamm- oder flossenförmigen Zusätzen	'dried bonito design': design on a vessel, consisting of continuously arranged S-shaped elements with crest- or fin-like protuberances
501 **kawabukurogata-doki** 皮袋形土器	kleines dreieckiges Tongefäß, wahrscheinlich Nachahmung eines Lederbeutels	triangular clay vessel shaped probably after a leather original
502 **kawahagi** *see* **ishisaji** 皮剝		
503 **kazari-ita** 飾板	figural verzierte Metall-Schmuckplatte in durchbrochener Arbeit (Eurasien, China)	metal plaque with openwork ornamentation (Eurasia, China)
504 **kei(-bu)** 頸（部）	Hals (eines Gefäßes)	neck (of a vessel)
505 **keirun** ケイルン	Cairn	cairn
506 **keisei-jidai** 形成時代	'Bildende Stufe' (Terminus der amerikanischen Archäologie)	formative stage (term used in American archæology)
507 **keishiki**¹ 形式	formenkundliche Einheit, die durch Einteilung des Fundmaterials nach seinen wesenhaften und bestimmenden Eigenschaften umschrieben wird; kann in *keishiki*² aufgegliedert werden.	typological unit obtained by sorting archæological objects according to their essential elements and constituent features; can be subdivided into *keishiki*²

508 **keishiki**^{2} 型式	formenkundliche Einheit, die durch Einteilung des Fundmaterials nach seinen sekundären Eigenschaften (Akzidentien) umschrieben wird: a) Subordnung von *keishiki*^{1}, wenn dieses als übergeordnete, *keishiki*^{2} umfassende Einheit angesehen wird; b) in *yōshiki* subsumiert, wenn der Stil als inkorporierendes Merkmal betrachtet wird; (keine einheitliche Auffassung in der japanischen Fachwelt; *vergl. keishiki*^{1}, *yōshiki*)	typological unit obtained by sorting archæological objects according to their subordinate (i.e. non-essential, accidental) features: a) a subgroup of *keishiki*^{1} if the latter is considered to be the larger group in which *keishiki*^{2} is included; b) subsumed in *yōshiki* if *yōshiki* is considered to possess incorporating power (no agreement among Japanese scholars; cf. *keishiki*^{1}, *yōshiki*)
509 **keishiki-bunrui** 型式分類	Klassifizierung und Einteilung archäologischer Objekte zur Aufstellung eines *keishiki*^{2}	classification and grouping of objects to establish a *keishiki*^{2}
510 **keishiki-settei** 型式設定	die Aufstellung eines *keishiki*^{2}	formation of a *keishiki*^{2}
511 **keishiki-suii** 型式推移	Formenübergang, Formenveränderung	typological change
512 **keishō-haniwa** 型象埴輪	Gebild-Haniwa, Figuren-Haniwa (Darstellung von [Un-]Belebtem)	figure haniwa, representing something (in)animate
513 **kekkō** 血溝	'Blutrinne' (Schwert)	fuller (on the blade of a sword)
514 **kekkyo** 穴居	Grubenwohnung; Höhlenwohnplatz	pit- or cave-dwelling
515 **ken-soku** 圏足	ringförmiger Standfuß; Standring	ring stand (of a vessel)
516 **kensui-doki** 懸垂土器	Gefäß mit Schnurösen an der Außenfläche (zur Befestigung des Deckels)	vessel with loops on the surface of its wall (for tying up the lid)
517 **kensui-mon** 懸垂文	Tonleisten in Verschnürungsform an der Außenfläche eines Gefäßes	clay strip lacing; clay strip tape-work on the surface of a vessel
518 **keshō-nendo** 化粧粘土	Schlicker	slip
519 **ketsu** 玦	Schlitz-Ohrring (China, Vor-Han-Zeit)	ear ornament in the shape of a slit ring (China, pre-Han dynasty)
520 **ketsugō** 結合	zusammengesetzt (z.B. Standfuß und Gefäß)	composite (e.g. bowl and its pedestal)

521 **ketsujō-mimikazari** 玦狀耳飾	Japanisches Gegenstück zum chinesischen *ketsu* *(siehe dort)*	Japanese-made equivalent to the Chinese *ketsu (see above)*
522 **ketsunyū-sekifu** 抉入石斧	Schaftkerbenbeil	(quadrangular) adze with a nick on one face; nicked adze
523 **kiba-magatama** 牙勾玉 *see* **gasei-magatama**		
524 **kiban** 基盤	Untergrund; Grundgebirge	base material, bed-rock, foundation
525 **kidai** 器台	Untersatz; Ständer (eines Gefäßes)	stand; pedestal (of vessel)
526 **kiheki** 器壁	Gefäßwand	wall (of vessel)
527 **kihon-bunka** 基本文化	Komponentenkultur	component culture
528 **kikagaku-mon** 幾何學文	geometrische Ornamente	geometric pattern, design
529 **kikagaku-yōshiki** 幾何學樣式	geometrischer Stil	geometric style
530 **kikakei-no-saisekki** *see* 幾何形の細石器 **kikateki-saisekki**		
531 **kikateki-saisekki** 幾何的細石器	geometrischer Mikrolith	geometric microlith
532 **kikkōkei-no-sekkaku** 龜甲形の石核	Schildkern	tortoise core
533 **kinkan** 金環	goldener Ohrring (mit nicht ganz geschlossenen Enden)	gold ring with open ends, used as ear ornament
534 **kinseki-heiyō-jidai** 金石併用時代	Zeit des gleichzeitigen Gebrauchs von Stein und Metall; Aeneolithikum; Chalkolithikum	period of contemporaneous use of metal and stone; eneolithic period; Chalcolithic Age
535 **kinseki-(moji-no-)gaku** 金石（文字の）學	Epigraphie	epigraphy
536 **kinzokki-jidai** 金屬器時代	Metallzeit	Metal Age
537 **kiriko-dama** 切子玉	Polyeder-Perle	polyhedric bead
538 **kirudo.sukurēpā** キールド・スクレーパー	Kielschaber	keeled scraper
539 **kizai-haniwa** 器材埴輪	Geräte-Haniwa: Haniwa in Form verschiedener Geräte und sonstiger Gebrauchsgegenstände	haniwa representing utensils and similar objects

540 **kizami-me** 刻み目	Einkerbungen als Verzierung (am Mundsaum)	notches (on the rim of a vessel)
541 **kizuchi-gihō** 木槌技法	Holzhammertechnik (Abschlagtechnik)	wooden hammer technique (flaking technique)
542 **kō** 湟	Graben (um ein Kofun)	moat (surrounding a kofun)
543 **koa.sukurēpā** コア・スクレーパー	Kernschaber	core scraper
544 **kō-dahō** 敲打法	a) Zuklopfen, Klopftechnik b) Zuschlagtechnik	pecking method
545 **kōdai** 高台	(angesetzter) Standfuß (eines Gefäßes)	pedestal, foot-rest (of a vessel)
546 **kōda-ki** 敲打器	Zuschlaggerät, bes. der frühen Kernformung	'axe-tool'; implement of the early core-industries
547 **kodama** 小玉	Kugelperle (kleiner als *marudama*)	globular bead, ball bead (smaller than *marudama*)
548 **kōen-bu**^{1} 後円部	der runde Hügelteil eines *zenpō-kōen-fun*	the round knoll of a *zenpō-kōen tomb*
549 **kōen(-bu)**^{2} 口縁（部）	Mundsaum(-teil) eines Gefäßes	rim (of a vessel)
550 **kōen-tan** 口縁端	oberster Mundsaumrand	lip (of a vessel)
551 **kōfuku-sekijin** 廣幅石刃	Breitklinge	broad blade
552 **kofun** 古墳	a) Grabhügel in Japan, der in der Kofun-Zeit angelegt wurde *(siehe: kofun-jidai)* b) fälschlich für Hügelgrab im allgemeinen	a) burial mound in Japan built during Kofun Period (*see kofun-jidai*) b) erroneously used to refer to burial mound in general
553 **kofun-jidai** 古墳時代	Kofun-Zeit: Periode der bevorzugten Errichtung von Hügelgräbern; in Japan ein Teil der Frühgeschichte	Kofun Period: period with the construction of kofun burial mounds as one significant feature of burial custom; in Japan chronologically within the protohistoric period
554 **kogata-chōkoku-ki** 小形彫刻器	Mikroburin	micro-burin
555 **kogata-ikei-sekki** 小形異形石器	unregelmäßig geformtes kleines Steingerät (als mehrschneidiges Messer verwendet?)	irregularly shaped chipped stone implement (used as multi-edge knife?)
556 **kogatana** 小刀	a) *siehe: ishi-kogatana* b) auch anstelle von: *naifu. burēdo*	a) *see: ishi-kogatana* b) also used for *naifu. burēdo*
557 **kogata-sekijin** 小型石刃	a) Kleinklinge; b) Mikroklinge	a) small blade; b) microblade

558 **kōgo-hakuri** 交互剝離	alternierende Randretusche, Wechselretusche	alternate flaking
559 **kōgyoku-daishu** 硬玉大珠 *see* **katsuobushigata-gyokki**		
560 **kōhen** *see* **kōen-bu²** 口辺		
561 **kōhyōki** 後氷期	das Postglazial	postglacial epoch
562 **kō-ji-mon** 工字文	Reziprokes T-Motiv; doppelseitiges T	H-shaped pattern
563 **kojō-jūkyo** 湖上住居	Pfahlbau	lake dwelling; lacustrine dwelling or habitation
564 **kōjō-jukyo** 杭上往居	Pfahlbau	pile dwelling
565 **kojō-monyō** 弧狀文樣 *see* **kosen-mon**		
566 **kokan** *see* 壺棺 **tsubo-kan**		
567 **kōkei-bu** 口頸部	Mundsaumteil plus Hals eines Gefäßes	mouth and neck (of a vessel)
568 **kōki** 後期	spät(es)	late
569 **kokkaku-hi** 骨角匕	Knochenschaber; Knochen- oder Hornspatel	bone or horn scraper or spatula
570 **kokkaku-kanzashi** 骨角簪	(Knochen-)Haarnadel	bone hairpin
571 **kokkaku-ken** 骨角劍	Knochenmesser	bone knife
572 **kokkakuki** 骨角器	Knochen- und Horngeräte	bone and horn implements
573 **kokkaku-sentō-ki** 骨角尖頭器	Knochenspitze; Hornspitze	bone or horn point or spearhead
574 **kokkan-ki** 酷寒期	Klima-Kaltperiode	cold climate phase
575 **kokki** 骨器	Knochenobjekt; Knochengerät	bone object; bone implement
576 **kōkogaku** 考古學	Archäologie als die Wissenschaft von der Erforschung des Menschen der Vergangenheit und seiner Kultur nach materiellen Zeugnissen und deren Deutung	archæology as the scientific study of man and his culture of the past, based on material relics and their interpretation
577 **kōkotsu-moji** 甲骨文字	Knocheninschriften	bone inscriptions

578 **kokumon-doki** 刻文土器 *see* **satsumon-doki**		
579 **kokuryū-mon** 穀粒文	Ellipsen-Roulette; abgerollte Ellipsenkette	oval bump rouletting; eye-shaped bump rouletting; lozenge-shaped bump rouletting
580 **kokusen-mon** 刻線文	Ritzlinienverzierung	incised lines; incised pattern
581 **komochi-doki** 子持土器	Mehrfachgefäß	vessel with shoulder-cups
582 **komochi-magatama** 子持勾玉	*Magatama* mit Fortsätzen; Besatz-*Magatama*	*magatama* with projections on its edge; pick-a-back *magatama;* parasitical *magatama*
583 **konamijō-kōenbu** 小波状口緣部	eng-gewellter Mundsaum	rippled rim
584 **konbō-tō (-sekki)** 棍棒頭（石器）	Keulenkopf (aus Stein) mit Schaftloch	(stone) mace- or club-head, with shaft-hole
585 **konkō-bunka** 混淆文化	Mischkultur	resultant culture
586 **ko-no-ha-mon** 木葉文	Blattmuster; Blattritzmuster (Yayoi-Keramik, *Dōtaku*, etc.)	leaf-design (on Yayoi pottery, *dōtaku*, etc.)
587 **ko-no-ha-zoko** 木葉底	Gefäßboden mit Blattabdruck	leaf-like impression on the base (of a vessel)
588 **koppu** 骨斧	Knochenaxt(-beil)	bone axe or adze
589 **kōro-gata-doki** 香爐型土器	'Räuchergefäß' (Deckel in durchbrochener Arbeit)	'incense burner' (with openwork lid)
590 **koropog-kuru (-setsu)** コロポツクル（說）	die *Koropogkuru* (-Sage): (Sage von der kleinwüchsigen) Urbevölkerung Nordjapans vor und z.T. gleichzeitig mit den Ainu	the *Koropogkuru:* (legend about the) aborigines living in prehistoric North Japan before and in part contemporaneously with the Ainu
591 **kōsei-hō** 敲製法	Klopftechnik	pecking method
592 **kōsei-sekifu** 敲製石斧	zugeklopfte(s) Steinaxt (-beil)	pecked stone axe or adze; stone axe (adze) shaped by pecking
593 **kōsekisei** 洪積世	Diluvium	diluvium, diluvial epoch
594 **kosen-mon** 弧線文	Bogenverzierung	arc ornament
595 **kosetsu-jidai** 古拙時代	die archaische Stufe (Terminus der amerikanischen Archäologie)	the Archaic Stage (term used in American archæology)
596 **koshikigata-doki** 甑形土器	Topf mit durchlöchertem Boden; Siebefäß; Dämpfgefäß	vessel with perforated bottom; sieve; steaming-vessel

597 **kōshime-mon** 格子目文	Gitterung; Gitterverzierung	latticework ornamentation
598 **kōshime-oshigata-mon** 格子目押型文	Gitter-Rollmuster	lattice-like rouletting
599 **koshoku** 古色	Farbveränderung der Objektoberfläche durch Alter; Patinierung	colouring of the surface of objects, indicating great age; patination
600 **kōsō** 厚葬	prunkvolle Bestattung Bestattung mit großem Aufwand (Kofun-Zeit)	ostentations burial, displaying high rank (Kofun Period)
601 **kossei-dai** 骨製台	Zwischenwirbelscheibe (z.B. eines Seesäugers), als Unterlagsplatte bei der Gefäßherstellung verwendet	intervertebral disc (e.g. of a sea mammal) used as a work-tray when making pottery
602 **kossei-harizutsu** 骨製針筒	Nadelbüchse (aus Knochen)	needle case made of bone
603 **kossei-nuibari** 骨製縫針	knöcherne Nähnadel	bone needle
604 **kosshin** 骨針	a) Knochennadel b) Knochenspitze (z.B. Aurignacien: mit gespaltener Basis)	a) bone needle b) bone point (e.g. Aurignacian bone point with cleft base)
605 **kossō** 骨槍	knöcherne Lanzenspitze mit Schaftzunge	bone spearhead with broad tongue-shaped tang
606 **kottō** 骨刀	schwertartiges Gerät aus einem Langknochen (Seesäuger)	big knife- or sword-like instrument made of a sea-mammal's bone
607 **koten-jidai** 古典時代	die klassische Stufe (Terminus der amerikanischen Archäologie)	the Classic Stage (term used in American archæology)
608 **kotsu-tsubo** 骨壺	Urne, Ossuar	bone-urn, ossuary
609 **kō-u-jidai(-ki)** 降雨時代（期）	Pluvial	pluvial age
610 **kubetsu** 區別	Unterscheidung	classification
611 **kubi-kazari** 頸飾	Halsschmuck	neck ornaments
612 **kubomiishi** 凹石	Dellenstein;	pitted stone; cupstone
613 **kubun** 區分	Gliederung; Einteilung; Unterscheidung	division
614 **kudatama** 管玉	Röhrenperle	tubular bead
615 **kūdō-doban** 空胴土版 *see* **chūkū-doban**		

616	**kū.do.poan** クー・ド・ポアン	Faustkeil	hand-axe
617	**kumiawase** 組合せ	Fundverband; Fundvergesellschaftung (z.B. Depositionen jeder Art, Depots, etc.)	any assemblage or assortment of *in situ* finds (e.g. closed finds, hoards, etc.)
618	**kumiawase-dōgu** 組合せ道具	zusammengesetztes Gerät	composite tool
619	**kumiawase-shiki-hakogata-sekkan** 組合式箱形石棺	(zusammengesetzter) Plattensarg (Abart des *kumiawase-shiki-sekkan*)	(composite) slab-built coffin (variety of the *kumiawase-shiki-sekkan*)
620	**kumiawase-shiki-sekkan** 組合式石棺	(nicht-megalithische) Steinkiste verschiedener Ausführung; *vergl.: kumiawase-shiki-hakogata-sekkan, naga-mochigata-sekkan*	(non-megalithic) stone cist of various shape and construction; cf. *kumiawase-shiki-hakogata-sekkan, naga-mochigata-sekkan*
621	**kumogata-mon** 雲形文	'Wolkenverzierung': Gefäßverzierung, bestehend aus Ketten von X-Figuren mit hahnenkamm- oder flossenförmigen Zusätzen	'cloud design' on a vessel, consisting of X-shaped elements with crest- or fin-like protuberances
622	**kurībā** クリーバー	Spalter	cleaver
623	**kurinuki-shiki-sekkan** 刳抜式石棺	ausgehöhlter Steinsarg	hollowed-out stone coffin
624	**kurisu-gata-dōken** クリス形銅剣	Kris-förmige Bronze-waffe; gleichbedeutend mit *dōka*	kris-shaped bronze weapon; stands for *dōka*
625	**kurisu-gata-sekken** クリス形石剣	Kris-förmige Steinwaffe; gleichbedeutend mit *sekka*	kris-shaped stone weapon; stands for *sekka*
626	**kuromurekku** クロムレツク	Cromlech	cromlech
627	**kurugan** クルガン	Kurgan	kurgan
628	**kuruma-zuka** 車塚	'Wagen-Hügel': Metapher für *zenpō-kōen-fun* mit oder ohne Begleittumuli	chariot-mound: a metaphor for a *zenpō-kōen* tomb with or without attached tumuli
629	**kushime-mon** 櫛目文	Zinkenmuster; Kammstrichverzierung	prong-marked design; comb-scratched ornament
630	**kushimemon-doki** 櫛目文土器	a) Kammkeramik b) manchmal für *Satsumon-doki*	a) comb-marked pottery, *Kammkeramik* b) sometimes used for *Satsumon-doki*
631	**kushiro** 釧	Armreif (außer Gebrauch kommender Ausdruck für *udewa;* jetzt nur mehr in Zusammensetzungen mit dem verwendeten Material; *vergl. dazu: dōkushiro, kaikushiro*	bracelet (obsolescent term for *udewa;* now only used as compound together with the material used; cf. *dō-kushiro, kaikushiro*
632	**kussō** *see* **sonsō** 屈葬		

633 **kutsugata-ono** 靴形斧	‘Stiefel-Beil’: Stein- oder Bronzebeil mit schräg ansteigender Schneide und fußspitzen- bzw. fersenförmig ausgebauchten Seitenkanten	shoe-shaped axe: of stone or bronze, with obtuse edge and slightly bulging sides
634 **kutsugata-sekifu** 靴型石斧	Schuhleistenkeil	shoe-last celt
635 **kuwagata-ishi** 鍬形石	Hauenförmiger (Armschmuck aus) Stein	hoe-shaped stone (bracelet)
636 **kyaku** 脚	Fuß(einer Fußschale, etc.)	foot (of a vessel)
637 **kyaripā-gata-doki** キャリパー形土器	Gefäß mit Greifzirkelprofil: ausgebauchter Hals und eingezogener Mundsaum; Glockentopf	caliper-shaped pot with bulging neck and turned-in rim; bell pot
638 **kyojin-densetsu** 巨人傳説	‘Riesensage’, wonach das Riesengeschlecht der *Daidarabotchi* Muschelhaufen und *Yokoana* etc. angelegt hat	legend, according to which shell-mounds and some of the *yokoana* etc. were relics of the giants *Daidarabotchi*
639 **kyōjō-totte** 橋状把手	vertikaler Bogenhenkel	upright arch-like handle
640 **kyokubu-masei-sekifu** 局部磨製石斧	teilweise geschliffenes Steinbeil; angeschliffenes Steinbeil	partially ground stone axe or adze
641 **kyokujin** 曲刃	Bogenschneide (bei einem Beil)	curved edge (of an axe or adze)
642 **kyokujin-sekifu** 曲刃石斧	Rundaxt; Rundbeil	round axe (adze)
643 **kyokusen-mon** 曲線文	Kurvilinearverzierung	curvilinear design
644 **kyoseki-bo** 巨石墓	Megalithgrab	megalithic tomb
645 **kyoseki-bunka** 巨石文化	Megalithkultur	megalithic culture
646 **kyoseki-kinenbutsu** 巨石記念物	Megalithdenkmal	megalithic monument
647 **kyosekki** 巨石器	Sammelbezeichnung für großformatige Steingeräte (meist beschränkt auf Lanzenspitzen mit 20 cm Länge und darüber, sowie auf zugeschlagene Steinbeile von 15 cm und mehr Länge)	collective term designating large stone implements (mostly applying to spearheads of 20 cm or more, and chipped stone axes of 15 cm or more in length)
648 **kyoshijō-tsumegata-mon** 鋸歯状爪形文	kontinuierliche Fingernageleindrücke; Hahnenkamm-Muster	continuous nail impressions; cockscomb pattern
649 **kyoshi-mon** 鋸歯文	Sägezahn (muster) mit Innenschraffen	continuous hatched triangles

650 **kyōzon-dōbutsu-gun** 共存動物群	Begleitfauna	associated faunal relics
651 **kyōzon-ibutsu** 共存遺物	Begleitfunde	associated finds; accompanying finds; closed finds
652 **kyōzon-shokubutsu-gun** 共存植物群	Begleitflora	associated botanical relics
653 **kyūsekki-jidai** 舊石器時代	Paläolithikum; Altsteinzeit	palæolithic age; Old Stone Age

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654 **magatama** 勾玉 曲玉	kommaförmige(r) Perle (Anhänger); Krummperle mit Bohrung	comma-shaped bead or gem with a hole on one side
655 **maguwa** 馬鍬	hölzerne gezinkte Haue (Yayoi-Zeit)	pronged hoe made of wood (Yayoi age)
656 **maikuro.burēdo** マイクロ・ブレイド *see* **kogata-sekijin**		
657 **maisō** 埋葬	Körperbestattung	burial; interment; inhumation
658 **maken suru** 磨研する	(Steinbeil) schleifen; (Keramik) glätten; polieren	to polish (stone axe); to burnish (vessel)
659 **maken-doki** 磨研土器	polierte Keramik	burnished pottery
660 **makiage-hō** 巻上法	Spiralwulsttechnik	coiling technique
661 **makura-ishi** 枕石 *see* **gyobutsu-sekki**		
662 **Marai-shiki-doki** マライ式土器	Malaiische Keramik (früher gebräuchlicher Ausdruck für Yayoi-Keramik)	Malayan pottery (obsolete term for Yayoi pottery)
663 **maru-dama** 丸玉	Kugelperle (größer als *ko-dama*)	globular bead; ball bead (larger than *ko-dama*)
664 **marukibune** 獨木舟 丸木舟	Einbaum	dugout (canoe)
665 **marumadotsuki-tsubogata-doki** 円窓付壷形土器 *see* **ensōtsuki-tsubo-gata-doki**		

666 marunomigata- 円鑿形石斧 **[sekifu**	zigarrenförmiges Zylinderbeil mit Hohlschneide	cigar-shaped cylindrical adze with hollow edge; gouge
667 maru-zoko 丸底	Rundboden	round(ed) bottom
668 masatsu no konseki 磨擦の痕跡	Abnützungsspuren; Schleifspuren	friction marks on implements due to wear and tear
669 masei-sekifu 磨製石斧	geschliffene(s) Steinbeil (axt)	polished stone axe or adze
670 masei-sekken 磨製石劍	doppelschneidiger geschliffener Steindolch	double-edged dagger of polished stone
671 menhiru メンヒル	Menhir	menhir
672 merukumāru メルクマール	Merkmal; Kennzeichen Leitmotiv	distinctive feature; identifying mark
673 mi 身	'Körper' eines Beils; Unterteil eines (Stein-) Sarges oder Sarkophages	body of an axe, stone coffin, sarcophagus, etc.
674 mimi 耳	Öse zur Schnurbefestigung und Schäftung (z.B. an der Tüllenlanzenspitze)	loop (e.g. on a socketed spear-head used for hafting)
675 mimi-dama 耳玉	Ohrenkranz (kleine Perlenschnur, die waagrecht durch die perforierte Ohrmuschel gezogen wird)	ear-beads, ear-rosary (small string of beads wound horizontally around the perforated auricle)
676 mimi-kazari 耳飾	Ohrschmuck	ear ornament
677 mimi-wa 耳環	Ohrring	ear-ring
678 mimizuku-dogū 木菟土偶	Eulenkopf-Statuette, eulengesichtige (Ton-) Statuette	owl-faced clay figurine
679 misei-hin 未製品	Halbfertigware	semi-processed, unfinished object
680 mitsu-domoe 三ツ巴	Dreizack; Dreidorn (als Verzierungsmotiv)	triple-ray motif; ternate spike motif; trefoil motif
681 miwadama 三輪玉	zweimal eingeschnürte, dreigliedrige, Perle	segmented gem; twice constricted gem
682 mokkaku 木槨	a) Holzauskleidung im Grab zur Aufnahme des eigentlichen Sarges b) Holzkammer oder Totenhaus (z.B. im Hügelgrab)	a) any timber structure protecting the coffin in a grave b) wooden burial chamber or funerary house (in a burial mound)
683 mokkaku-bo 木槨墓	Grab mit *mokkaku*	grave containing a *mokkaku*
684 mokkan 木棺	Holzsarg	wooden coffin

685 **mokken** *see* 木剣 **herajō-mokusei-hin**		
686 **mokki** 木器	Holzobjekt; hölzernes Werkzeug	wooden object; wooden implement
687 **mokumejō-yoriitomon** 木目状撚糸文	Roll-Maserverzierung (durch Schnurabrollung erzielte Holzmaserverzierung)	wood-fibre pattern produced by the string rouletting technique
688 **mokutan-kaku** 木炭槨	Holzkohlenschüttung (um den Sarg oder Sarkophag im Kofun)	charcoal filling or bedding (for the coffin or sarcophagus in a kofun)
689 **mokutō** *see* 木刀 **herajō-moku (sei) hin**		
690 **momi-akkon** 籾圧痕	(Reis-)Kornabdrücke (auf der Gefäßoberfläche,-standfläche, etc.)	(rice) grain impressions (on the vessel surface)
691 **monyō** 文様	Verzierung; Muster	design; ornament; pattern
692 **monyō-tai** 文様帯	Ornamentzone; Zonalverzierung; Zonenornament	decorated band or zone;
693 **mo(r)i** 盌	(Fuß-, Stielgriff-)Becher	small stemmed or handled bowl
694 **mori** 銛	a) Kippkopf-Harpune Trennkopf-Harpune *toggle-head harpoon* b) Fixkopf-Harpune	a) toggle-head harpoon b) fixed-head harpoon
695 **mori-gashira** 銛頭	Harpunenkopf Harpunenspitze	harpoon head
696 **moro-ha** *see* 諸刃 **ryō-ha**		
697 **mōrudingu** モールデイング	Aufbau eines Gefäßes nach einer Form oder Schablone	moulding a vessel
698 **moshiki-ibutsu** 模式遺物 *see* **hyōshiki-ibutsu**		
699 **moshiki-iseki** 模式遺跡 *see* **hyōshiki-iseki**		
700 **moyō** *see* 模様 **monyō**		
701 **mudoki-bunka** 無土器文化	a) präkeramische Kultur (en) b) keramiklose Kultur(en)	a) pre-ceramic culture(s) b) culture(s) without ceramic
702 **mukeizoku** 無莖鏃	stiellose (Pfeil-)Spitze	arrowhead without tang, stemless arrowhead

N

703	**nagamochigata-** 長持形石棺 [**sekkan**	'Steintruhe', bestehend aus sorgfältig zugerichteten, ineinander verfalzten Steinplatten mit Griffzapfen; Abart des *kumiawase-shiki-sekkan*	chest-type stone coffin of grooved and tongued slabs, with external lugs; variety of the *kumi-awase-shiki-sekkan*
704	**naifu.burēdo** ナイフ・ブレイド	Federmesser, Rückenmesserchen	knife blade; backed blade
705	**naifugata-ishisaji** ナイフ型石匙	langschmaler Griffknopfschaber mit zwei längsseitigen Arbeitskanten; Messerschaber	stemmed oblong scraping or cutting instrument with two edges; stemmed knife-scraper
706	**naifugata-sekki** ナイフ形石器	a) *see: ishi-kogatana* b) auch verwendet anstelle von: *naifu. burēdo*	a) *see: ishi-kogatana* b) also used for *naifu. burēdo*
707	**naihan** 內反	Einkehlung bei einem Gefäß; sie ergibt: a) eingezogenen Mundsaum bei gerader oder gebauchter Gefäßwand (jüngere Auffassung) b) leicht ausgeweitet erscheinenden Mundsaum, wenn der Hals des Gefäßes nach innen gekehlt ist (ältere Auffassung)	inward flexion or curvature of the upper part of a vessel, meaning: a) in-turned rim, if the term is applied to the rim on a straight or bulging wall (more recent interpretation) b) rim appearing as slightly out-turned, if the term is applied to the neck (older interpretation)
708	**naiji-doki** 內耳土器 *see* **uchimimi-doki**		
709	**naikei** 內傾	sich verengend (Oberteil eines Gefäßes)	diminution of width (neck or rim of a vessel)
710	**naimen-shimon** 內面施文	Innenverzierung	inner surface ornamentation
711	**naiwan** 內彎	nach innen geschweift (von der Gefäßwand)	inward curve or curvature (referring to the wall of the vessel)
712	**nakago** 莖	a) Griffangel b) Griffzunge (genauere Termini dienen zur Bezeichnung der Angel- und Zungenformen)	a) rod-shaped tang b) flat tang, tongue-shaped tang (more precise and detailed terms used when designating the different shapes of tangs)
713	**namigata** 波形	gelappt; lappig (z.B. Mundsaum)	lobed (e.g. rim)
714	**natsume-dama** 棗玉	Tonnenperle	barrel-shaped bead

715 nawakake-tokki 繩掛突起	Griffzapfen am Steinsarkophag etc.	lugs on lid and walls of a stone sarcophagus etc.
716 nawa(me)-mon 繩（目）文	parallele Schnureindrücke auf der Außenfläche eines Ziegels der Nara- und Kamakurazeit	parallel string impressions on the convex side of a Nara and Kamakura age tile
717 nendai 年代	Zeitpunkt	date
718 nendaigaku 年代學	Chronologie (als Wissenschaft, d.h. Forschungsgebiet)	chronology (as field of research)
719 nendai-kōsa 年代交义	Kreuzdatierung; chronologische Überschneidung	cross dating; chronological overlapping
720 nendo 粘土	Ton (als erdhaftes Rohmaterial)	clay (as raw material)
721 nendo-himo 粘土紐	Tonleiste	clay ribbon
722 nendo-kaku 粘土槨	Lehmumhüllung eines Holzsarges (im Kofun)	clay coating of a wooden coffin
723 nendokō-sokutei-hō 粘土縞測定法	Varven-Analyse; Varvenchronologie	varve analysis; varve chronology
724 nendo-shō 粘土床	Lehmbett für einen Holzsarg (im Kofun)	clay bedding of a wooden coffin (in a kofun)
725 nenrin-sokutei-hō 年輪測定法	Dendrochronologie; Jahresring-Chronologie	dendrochronology and its method
726 nigiri-ono *see* 握斧 **hando.akkusu**		
727 nigiri-zuchi *see* 握槌 **hando.akkusu**		
728 niji-hakuri 二次剝離	Sekundärabschlag Feinzurichtung	secondary flaking or shaping, retouching
729 nintō-mon 忍冬文 *see* **karakusa-mon**		
730 nippo-nantoropusu ニツポナントロプス	unkorrekte Schreibung für *nippon-antoropusu* ニツポン・アントロプス	incorrect transcription for *nippon-antoropusu* ニツポン・アントロプス
731 nomi 鑿	(Metall-) Meißel; auch Hohleisen	metal chisel; gouge
732 nomigata-sekifu 鑿形石斧	meißelförmiges schlankes Vierkantbeil	chisel-shaped quadrangular adze
733 noshiro 箆代	Knochennadel mit einem abgeschrägten Ende (Zweck ?)	bone awl or point with one bevelled end (usage ?)
734 notchingu ノツチング	Kerbung durch Randretusche	notching
735 nousu-sukurēpā ノウス・スクレイパー	Schnauzenschaber	nose scraper

736	**nuno-ato** 布痕	Gewebeabdrücke (auf dem Gefäßboden)	cloth texture or textile marks (on the base of a vessel)
737	**nunome-gawara** 布目瓦	Ziegel mit Gewebeabdrücken	tile with woven mesh imprints
738	**nyūbōjō-sekifu** 乳棒状石斧	eine Art von spitznackigem Zylinderbeil	cylindrical axe with pointed butt
739	**nyūbōjō-sentei** 乳房状尖底	Spitzboden mit Bodenwarze	pointed base with small knob-like projection; knobbed base, nippled base
740	**nyūkuriasu** ニユークリアス	Nukleus	nucleus
741	**nyūyōji-kamekan** 乳幼児甕棺	Bestattungsgefäß für einen Säugling oder ein Kleinkind	burial jar for an infant

O

742	**ōatsu-hakuri** 押壓剝離	Druckretusche (als Steinbearbeitungstechnik)	technique of pressure flaking
743	**obi-kanagu** 帶金具	a) Gürtelbeschlag b) Gürtelschließe	a) girdle metal-plaque, plaque-shaped belt fitting b) belt clasp
744	**oimawashi-mon** 追廻文	wellenförmige Spirale; Laufspirale; fortlaufender Wirbel	continuous scroll(s)
745	**ōgata-ryomen-** 大形両面石器 **[sekki**	zugeschlagene Großspitze (wahrscheinlich Ausgangsstück zur Herstellung von *funazoko-gata-sekki*)	large bifacial point (supposed to be the core for producing the *funazoko-gata-sekki*)
746	**ōkan-dogū** 王冠土偶	(Jōmon-) Statuette mit kronenförmigem Aufsatz	clay figurine with headgear or turban; 'crowned' clay figurine
747	**(kaiten-)ōnatsu (suru)** （回轉）押捺する	mit Rollmustern verzieren	to apply ornaments by the rouletting technique
748	**ono** 斧	Axt	axe
749	**orekaetta (kōen)** 折れ返つた	'ausladend' (Mundsaum); (ungenauer Ausdruck, kein Terminus)	out-turned, everted (rim); (degree of evertion not designated by this expression; should be avoided)
750	**orimono** 織物	Gewebe; Tuch; Textilware; Textur	cloth; woven goods
751	**ōsen** 凹線	(tiefe) Rillen (als Verzierungselement)	grooves (as ornamentation)

752	**osenbei-doki** *see* あせ んべい土器 **saisenmon-shikon-usude-doki**		
753	**oshigata-mon** *see* 押型文　捺型文 **kaiten-oshigata-mon**		
754	**ōten-mon** 押点文	Punktverzierung	dots; punctations; punches

P

755	**panchi-dahō** パンチ打法	indirekte Abschlagtechnik	punch technique
756	**pachina** パチナ	Patina	patina
757	**pite-kan-toropusu** ピテカントロプス	unkorrekte Schreibung für *piteku-antoropusu* ピテク・アントロプス	incorrect transcription for: *piteku-antoropusu* ピテク・アントロプス
758	**pointo** ポイント	Spitze	point
759	**purein.burēdo** プレインブレイド	(zu keiner bestimmten Type verarbeitete) Klinge	plain blade

R

760	**raifu(-seki)** 雷斧石	'Donnerkeil'	'thunderbolt'
761	**rajio.kābon.nendai-sokutei** ラジオ・カーボン年代測定 *see* **hōshasei-tanso-nendai-sokutei**		
762	**rakujōtai-akkon-mon** 絡條體壓痕文縄	Wickelschnur-Eindrücke	string-wrapped dowel imprints; coiled string impressions
763	**rakurowāru** ラクロワール	*racloir* Breit(-klingen-)schaber	*racloir* flake-scraper
764	**ramēru** ラメール *see* **kogata-sekijin**		
765	**rāmu** *see* **burēdo** ラーム		
766	**rankei-hando.akkusu** 卵形ハンドアックス	ovaler Biface	ovate form of hand-axe

767	**raundo.sukurēpā** ラウンド・スクレイパー	Rundschaber	round scraper
768	**rei** 鈴	Schelle (als Verzierungselement an Bronzespiegeln und am Pferdegeschirr, etc.)	spherical bell (as attached to a bronze mirror, or used as horse trappings)
769	**rekikaku** 礫槨	Steinschüttung(um den Sarg oder Sarkophag im Kofun)	gravel filling or bedding (for the coffin or sarcophagus in a kofun)
770	**rekishi-jidai** 歷史時代	(Zeit der geschriebenen) Geschichte	(age of recorded) history
771	**rekishi-kōkogaku** 歷史考古學	historische Archäologie, d.h. die Erfoschung der schrifthistorischen Zeit mit archäologischen Methoden	historical archæology, i.e. scientific study of the period of recorded history by archæological methods
772	**reki-shō** 礫床	Steinbettung; Kieselbettung (im Kofun für der Sarkophag als Auf- und Unterlage)	gravel bedding; gravel ballast (supporting the sarcophagus in a kofun)
773	**rekki** 礫器	Geröllartefakt (nicht in allen Fällen Werkzeug)	pebble artifact (not necessarily a tool)
774	**renko-mon** 連弧文	fortlaufende(s) Bogen (-Muster)	continuous arcs
775	**renshu-mon** *see* **shumon** 連珠文		
776	**renten-mon** 連點文	Punktreihe	dotted line, row of punctations
777	**renzoku-yamagata-mon** 連續山形文	fortlaufendes Zickzackmuster	continuous zigzag pattern
778	**reppen** *see* **hakuhen** 裂片		
779	**resseki-gun** 列石群	(megalithische) Steinreihe	(megalithic) stone row
780	**retten-mon** *see* **tensen** 列點文		
781	**rikajō-hando akkusu** 梨果狀ハンドアックス	birnförmiger Biface	pear-shaped hand-axe (biface)
782	**rittai-dosei-hin** 立體土製品	körperhafte Tonobjekte (Kegel, Kegelstumpf, etc.) mit Bohrung durch die Hauptachse	(cone-,frustum-,etc.shaped) clay solids with a perforation through the main axis
783	**ro-ana** 爐穴	Feuergrube außerhalb der Wohngrube, z.T. mit mehreren Feuerstellen (Zweck unklar)	fire-pit with one or more fireplaces outside the dwelling place (purpose unclear)
784	**ro-ato** 爐址	Feuerstelle innerhalb der Wohngrube	fireplace in a dwelling pit
785	**rokkaku-ki** 鹿角器	Hornobjekt; Horngerät	deer-antler object or implement

786	**rokkakusei-koshikazari** 鹿角製腰飾	'Hüftschmuck' aus geschnitzten Hornstückchen	waist or belt ornaments made of carved horn, antler, etc.
787	**rokuro** 轆轤 a) *fumi-rokuro* 踏- b) *te-rokuro* 手-	Töpferscheibe a) T. mit Fußantrieb b) Handscheibe	potter's wheel a) foot-operated b) hand-operated
788	**rōmu** ローム	zu Lehm verwitterte Vulkanasche(nschicht) (z.B. der Kantō-Lehm)	loam as weathered volcanic ash deposit (e.g. the Kantō loam)
789	**rōmu-sō** ローム層	Lehmschicht	loam bed
790	**roshutsu (suru)** 露出する	ausbeißen (z.B. Muschelschicht an der Erdoberfläche)	to crop out (e.g. shells lying on the surface of a shell mound)
791	**rosutoro.kyarinēto** ロストロ・キヤリネート	Rostro-Carinete	rostrocarinate
792	**(bunka) ruikei** 文化類型	(Kultur-)Pattern	pattern (of culture)
793	**ryō** 稜	Gratlinien auf der Dorsalseite eines Klingengerätes, bestehend aus den Rändern von Abschlagnegativen	the ridges on the dorsal face of a blade, consisting of the edges of flake scars
794	**ryōbo** 陵墓	kaiserliches Hügelgrab; Gräber für den Kaiser und für die Angehörigen der kaiserlichen Familie	tombs of the emperor and the imperial family
795	**ryō-eguri** 両抉	mit beidseitiger Kerbe oder Schulter	provided with two (opposite) nicks or shoulders
796	**ryō-ha** 両刃	a) Schwert: mit Doppelschneide versehen, zweischneidig b) Axt: mit Giebelschneide, Giebelschliff, Axtschneide versehen; c) Chopping-tool-Schneide	a) sword: double-edge, two-edged b) axe: double-plane edge, axe-edge; c) chopping-tool edge
797	**ryōkei-mon** 菱形文	konzentrisches Rautenmuster	pattern of concentric lozenges
798	**ryōken-pointo** 両肩ポイント	Stielspitze (z.B. vom Typ Font Robert, Lyngby, etc.)	double-shouldered point (e.g. Font Robert, Lyngby, etc.)
799	**ryōkijun** 量規準	Quantitätskriterium	criterion of quantity (criterion of accumulated evidence)
800	**ryōmen-chōsei** 両面調整	zweiseitige, bifaziale Zurichtung oder Bearbeitung	bifacial shaping or retouche
801	**ryōsodegata-sekishitsu** 両袖型石室	Ganggrabkammer mit der Gangmündung in der Mitte der Stirnwand symmetrisches Ganggrab	stone-built chamber in a kofun where the entrance from the corridor is situated at the centre of the front wall; symmetrical passage grave or corridor tomb

802 **ryōtan-gekida** 両端撃打	Bipolarschlag	bipolar blow
803 **ryōtō-sekifu** *see* 両頭石斧 **dokko-ishi**		
804 **ryōyoku-zoku** 両翼鏃	zweiflügelige Pfeilspitze	double-winged arrowhead
805 **ryūjō-totte** 瘤狀把手	(zwei bis vier gegenständig angebrachte) Griffwarzen	knob-shaped projections on a vessel, to serve as handles; holding-knobs
806 **ryūki** 隆起	(verzierende) Fortsätze (auf dem Mundsaum); Mundsaumzipfung	(rim) projections; peaks
807 **ryūkisen-mon** 隆起線文	Tonrippen (dünn, schmal)	slender clay ridges
808 **ryūkō** 流口	Schnabel eines Gefäßes; Schneppe	beak (of a vessel)
809 **ryūkotsujō-sekki** 竜骨狀石器	Rostrocarinete	rostrocarinate
810 **ryūsen(-mon)** 隆線	Tonrippen(verzierung); manchmal anstelle von *tottai (mon)* verwendet	clay ridge (ornament); stands sometimes for *tottai (mon)*
811 **ryūsui-mon** 流水文	Mäander-Verzierung	meander pattern, *l'eau courante*
812 **ryūyōkei-pointo** 柳葉形ポイント	Weidenblatt-Spitze	willow-leaf point

S

813 **saboko** 狹鋒 *see* **semasaki-dōboko**		
814 **saguri-bori** 探掘	Versuchsgraben; Suchgraben	trial trench
815 **saibu-kakō** 細部加工	Feinretusche	chipping, trimming
816 **saibun** 細分	Feingliederung	subdivision, subgrouping
817 **saichō-sankakukei-oshigata-mon** 截頂三角形押型文	Trapez-Rollmuster	trapeziform rouletting
818 **saido-sukurēpā** サイドスクレーパー	a) Seitenschaber b) Abschlaggerät mit Schaberkante	a) side scraper b) flake with scraper edge
819 **saihei, -bei** 齋瓶	Zeremonialkeramik	ceremonial ware
820 **sai-jinki** 細刃器	Mikroklinge	micro-blade

821	**saikakō** 再加工	Nachbearbeitung	reprocessing; repeated chipping or trimming; touch (up)
822	**saimon-doki** 彩文土器	bemalte Keramik	painted pottery
823	**sai-sekijin** 細石刃	a) Mikroklinge b) Kleinklinge	a) microblade b) small blade
824	**saisekki** 細石器	Mikrolithen, wie z.B. Mikroklingen und -kernstücke	microliths, such as microblades and -cores
825	**saisenmon-shikon-usude-doki** 細線文指痕薄手土器	deskriptiver Name für die Kijima-Keramik im Reg.-Bez. Shizuoka: dünnwandige Keramik mit feinen Linien (Gitterung), aufgetragenen Tonleisten (senkrecht) und Fingerspitzen-Eindrücken (intentionell?)	descriptive name for Kijima pottery (Shizuoka Pref.): thin-walled ware with delicately incised lines (lattice work), applied clay ribs (vertical) and finger tip impressions (unintentionally produced?)
826	**saishi-iseki** 祭祀遺跡	Kultplatz (als Fundstelle)	archæological vestiges of a religious site
827	**saishiki** 彩色	Bemalung (der Gefäßwand, etc.)	painting (on the wall of a vessel)
828	**saishū-keizai** 採集經濟	aneignende Wirtschaft	food gathering economy
829	**saitō** 彩陶	bemalte Keramik: in China Yangshao im engeren Sinn	painted pottery (in China: Yangshao)
830	**sajō-kenshi** 叉状研歯	künstliche Zahneinkerbung	V-shaped tooth mutilation
831	**sakki** 削器	Seitenschaber	side scraper
832	**sakuhen** 削片	Absplisse	spalls, splinters
833	**sameha-zoku** 鮫歯鏃	dreieckige Steinpfeilspitze mit gezähnten Schneiden	triangular (stone) arrowhead with two serrated edges
834	**san-jidai-kubun-hō** 三時代區分法	Dreiperiodensystem, -theorie	three-period system; three-period theory
835	**sanjiki-hō** 三時期法 *see* **sanjidai-kubun-hō**		
836	**sankaku-buchi** 三角縁	gekanteter Rand (beim Bronze-Spiegel)	ridged or reinforced border (of a bronze mirror)
837	**sankakusui-zoku** 三角錐鏃 *see* **sanryō-zoku**		
838	**sankyaku-sekki** 三脚石器	zugeschlagenes dreiflügeliges Steingerät	triradiate, Y-shaped, chipped stone object
839	**sanpu** 散布	Streuung (von Funden über eine Fläche)	dispersion (of objects found scattered over a certain area)

840 sanryō-zoku 三稜鏃	dreiflächige Pfeilspitze	three-faced arrowhead
841 sansai 三彩	trichrom-	trichromic
842 san.tashuru サンタシユル	unkorrekte Schreibung für *santo.ashuru* (St. Acheul) サント・アシユル	incorrect transcription for *santo.ashuru* (St. Acheul) サント・アシユル
843 sanyoku-zoku 三翼鏃	dreiflügelige Pfeilspitze	three-winged arrowhead
844 sanzai (suru) 散在する	vereinzelt auftreten (von Funden innerhalb eines Gebietes)	occurring sporadically, found here and there
845 sara[1] 皿	Keramikform zwischen Untertasse und flachem Teller	pottery form ranging between saucer and plate
846 sara[2] 盤	Keramikform: flache Schüssel oder tiefer Teller mit Schüsselrand	dish-shaped pottery
847 satsumon(-shiki-) 擦文式土器 **[doki**	Keramik mit Ritz- und Schraffenverzierung (in Hokkaidō), sogenannte Satsumon-Keramik	pottery with incised design (in Hokkaidō), so-called Satsumon pottery
848 S.D.-hō エス・デイー法	Sequenz-Datierung	sequence dating
849 seidōki-jidai 青銅器時代	Bronzezeit	Bronze Age
850 seidō-sekki-jidai 青銅石器時代	Bronze-Steinzeit	Bronze-Stone Age
851 seikaiha-mon 青海波文	einander ungeordnet überlagernde kreisförmige Eindrücke auf der Innenseite mancher Suegefäße, durch Entgegenhalten eines runden Ambosses bei der Erzeugung einer Schlagmusterverzierung auf der Außenfläche entstanden	ring anvil marks on the inner surface of a Sue vessel, resulting from the pressure created when decorating it on the outer surface with a bat or stamp
852 seikatsumen 生活面	geschlosseneSiedlungsfläche innerhalb einer bestimmten Periode	area of occupation at a certain period
853 seiryūtō-sekki 青龍刀石器	eine Art hackmesserförmige flache Steinkeule	kind of highly polished stone cleaver
854 seisei-doki 精製土器	Feinkeramik	finely manufactured pottery
855 seki-ba 石馬	Steinpferd (wie Haniwa verwendet)	stone horse (used in the same way as a clay haniwa)
856 seki-bō 石棒	Steinstab mit zwei knopfartig abgesetzten Enden	bar-shaped stone club with two handle knobs
857 sekichin 石枕	schnitzverzierte steinerne Nackenstütze (China, nördliches Chou); nicht zu verwechseln mit *ishimakura*	ornamentally carved stone block serving as neck-rest (China, Northern Chou); do not confuse with *ishimakura*

858 **seki-chō** 石塚	Steingrabbau von festgesetzter Form (rund, viereckig, etc.)	stone-built tomb with fixed shape (circular, quadrangular, etc.)
859 **sekifu** 石斧	Steinbeil; Steinaxt	stone axe; stone adze
860 **sekigai-dokō** 石蓋土坑	lang-schmale Grabgrube mit Deckplatte(n)	trench-type burial pit with stone-slab cover
861 **seki-gū** *see* **gangū** 石偶		
862 **seki-hi** *see* **ishisaji** 石匕		
863 **sekijin** *see* **burēdo** 石刃		
864 **seki-jin** 石人	a) anthropomorphe Stein-Haniwa b) 'Grabwächter' in China zur Han-Zeit	a) anthropomorphic stone haniwa b) stone statue used as tomb guard in the Han period
865 **sekijin-sekijū** 石人石獣	Steinerne Grabwächter in menschlicher und tierischer Gestalt in China (Han-Zeit)	anthropomorphic and zoomorphic stone images, used as tomb guards in Han China
866 **sekisei-an** 石製案	ein *sekisei-mozō-hin:* flacher viereckiger Teller mit vier Füßchen (Funktion unklar; Reibschale?)	a *sekisei-mozō-hin:* quadrangular flat plate or saucer on four tiny feet (function not quite clear; kind of quern?)
867 **sekisei-fune** 石製槽	Steinimitation einer 'Klärvorrichtung' (?): Steinplatte mit zwei durch Zu- und Ablaufrinnen verbundenen Vertiefungen und einer Abflußbohrung im Boden	stone replica of a trough or filter bed (?): stone tablet with two depressions interconnected by waste- and feed-water groove, and with one outlet perforation through the bottom (usage not clear)
868 **sekisei-gōsu** 石製合子	steinerne Deckelbüchse	small stone bowl with lid
869 **sekisei-hin** 石製品	sorgfältig ausgeführte Steinobjekte, Grabbeigaben für sozial gehobene Bestattete	carefully manufactured stone objects buried as grave goods with high-ranking persons
870 **sekisei-mozō-hin** 石製模造品 *see* **sekisei-mozō-kigū**		
871 **sekisei-mozō-kigū** 石製模造器具	Steinimitationen verschiedener Objekte als Grabbeigaben	stone replicas of various objects, used as grave goods
872 **sekisei-ono** 石製斧	Steinimitation von Eisenbeilen und -meißeln	stone axe, adze or gouge modelled after the corresponding iron tool
873 **sekisei-tagane** *see* 石製鏨 **sekisei-ono**		
874 **sekisei-tōsu** 石棒刀子	Steinimitation eines in der Scheide steckenden Messers	stone replica of a knife in the sheath

875	**sekisei-ki** *see* 石世期 **sekki-jidai**		
876	**sekishitsu-henka** 石質變化	Patinierung an Steinobjekten	patination of stone artifacts
877	**sekishitsu** 石室	Grabkammer mit Steinauskleidung	stone burial chamber
878	**sekishitsu-fun** 石室墳	Steinkammergrab	tomb with stone chamber
879	**seki-sō** *see* 石槍 **ishiyari**		
880	**seki-sui** *see* 石錐 **ishikiri**		
881	**sekisui** 石錘	Steingewicht; Netzsenker aus Stein	stone weight; net sinker
882	**sekitō** 石刀	a) einköpfiger Steinstab mit einer Schneide b) chinesisches *ishi-bōchō*	a) single-edged stone club with one knob for handle b) Chinese *ishi-bōchō*
883	**sekizoku** 石鏃	Steinpfeilspitze	stone arrowhead
884	**sekka** 石戈	steinerne Stabdolchklinge (Hackdolchklinge), als Steinimitation der entsprechenden Metallwaffe	stone copy of a metal pick-dagger ('halberd')
885	**sekkai** 石塊	Knollen	nodule
886	**sekkaku**^{1} 石核	(Rest-) Nukleus	core, nucleus
887	**sekkaku**^{2} 石槨	a) Steinumkleidung, Steinschutz für den Sarg b) Steinsarkophag (z.B. aus Plattenzusammengesetzt)	a) stone structure protecting the coffin b) stone sarcophagus (e.g. built of stone slabs)
888	**sekkaku-bo** 石槨墓	Grab mit *sekkaku*^{2}	grave with *sekkaku*^{2}
889	**sekkaku-chōtō** 石核彫刀	Kernstichel	core graver
890	**sekkaku-sekki** 石核石器	Kernstück, Kerngerät	core tool
891	**sekkan**^{1} 石冠	'*Sekkan*', 'Steinkrone': verschieden großes stempelförmiges Steingerät mit Griffknauf (verschiedene Typen)	*sekkan*, stone crown, stone hat: stamp-shaped stone object with more or less broad body and knob handle (various types)
892	**sekkan**^{2} 石環	kleinformatiger Steinkeulenkopf; *vergl. konbōtō-sekki*	small ring-shaped mace-head; cf. *konbōtō-sekki*
893	**sekkan**^{3} 石棺	jeder zur Aufnahme des Leichnams bestimmte, aus Stein hergestellte Behälter; ausgehöhlter Steinsarg; Plattensarg	any stone-made repository in which the corpse is placed; dugout stone coffin; slab-built coffin

894 **sekkan-bo** 石棺墓	Grab mit *sekkan*[3]	grave containing a *sekkan*[3]
895 **sekken** 石劍	einköpfiger Steinstab mit zwei Schneiden	double-edged stone club with one handle knob
896 **sekki** 石器	Steinobjekt; Steingerät	stone object; stone implement
897 **sekki-bunka** 石器文化	Kultur der (Alt-)Steinzeit	(palæolithic) Stone Age culture
898 **sekki-jidai** 石器時代	Steinzeit; die lithische Stufe	Stone Age; the lithic stage
899 **sekkijidai-bochi** 石器時代墓地	steinzeitliches Grabareal	Stone Age burial place
900 **sekkijidai-doki** 石器時代土器	Steinzeit-Keramik, selten verwendeter Ausdruck für Jōmon-Keramik	Stone Age pottery; term sometimes used for Jōmon pottery
901 **sekkijidai-magatama** 石器時代勾王	eine Art *Magatama* aus Krallen, Zähnen, Horn, Knochen, Stein, etc. (Jōmon-Zeit)	comma-shaped objects made of teeth, tusks, claws, horn, antler, bone, etc. (Jōmon age)
902 **sekko** *see* **dokko-ishi** 石鈷		
903 **semasaki-dōboko** 挾鋒銅鉾	langschmale Tüllenlanzenspitze aus Bronze	bronze spearhead, socketed and with a long narrow blade
904 **semasaki-dōka** 挾鋒銅戈	schmaler Bronze-Hackdolch (Stabdolch)	bronze pick-dagger(halberd) with narrow blade
905 **sen-** 先	prä-	pre-
906 **sendō** *see* **endō** 羨道		
907 **sendō-bo** *see* **endō-bo** 羨道墓		
908 **sendō-mon** *see* **enmon** 羨道門		
909 **seni-doki** 纖維土器	Keramik mit Pflanzenfasermagerung	fibre-tempered pottery
910 **senjō-jōmon-doki** 線状縄文土器	Schnurverzierung europäisch-sibirischen Stils	corded ware, cord-impressed pottery (e.g. Europe, Siberia)
911 **sen-jōmon-bunka** 先縄文文化	Prä-Jōmon-Kultur (keramiklose Steinzeitkultur)	pre-Jōmon culture; pre-ceramic culture; pre-pottery culture (non-ceramic culture)
912 **sen-jūmin** 先住民	Urbewohner	aborigine(s)
913 **senkei-en** 尖型縁	gezipfter Mundsaum	peaked rim
914 **(ni) senkō (suru)** に先行する	(chronologisch) vorausgehen; früher anzusetzen sein	to precede; to antecede
915 **senku** 先驅	Vorläufer	predecessor

916	**senro-shujutsu** 穿顱手術	Trepanation (als Operation)	trepanation (as operation)
917	**senro-zugai** 穿顱頭蓋	Schädel mit Trepanation; trepanierter Schädel	skull with trepanation; trepanned skull
918	**senshigaku** 先史學	Urgeschichte als Wissenschaft vom Menschen und seiner Kultur in vorschriftlicher Zeit	prehistory as the scientific study of man and his culture in preliterate times
919	**senshigaku-genshigaku** 先史學原史學	Ur- und Frühgeschichte als Fächer	pre- and protohistory as sciences
920	**senshi-jidai** 先史時代	die urgeschichtliche Zeit als der vorschriftliche Abschnitt in der Menschheits- und Kulturentwicklung	prehistory as the preliterate period in the development of man and culture
921	**senshi-kōkogaku** 先史考古學	urgeschichtliche Archäologie: Erforschung der vorschriftlichen Menschheitsperiode mit den Methoden der Archäologie	prehistoric archæology: scientific study of preliterate times of human culture by archæological methods
922	**sentei** 尖底	Spitzboden	pointed bottom (of vessel)
923	**sentō-ki** 尖頭器	Gerät mit Arbeitsspitze (keine Typenform)	point (any kind of pointed tool, not a type)
924	**sesshoku-chitai** 接觸地瀨	Berührungszone (zweier Kultur- und Verbreitungsgebiete)	contact zone of two cultures or areas of distribution
925	**Setouchi-gihō** 瀨戸內技法 *see* **yokohagi-sekihen**	(Setouchi-Technik)	(Setouchi technique)
926	**setsugō** 接合	Naht (bei Zusammensetzung eines Gefäßes aus mehreren Teilen sichtbar)	suture or seam (showing where parts of a vessel were soldered or luted together)
927	**shagyō-jōmon** 斜行繩文	schräges Flächenjōmon	(an area filled with) oblique Jōmon impressions
928	**shakkotsu** 灼骨	Orakelknochen	oracle bone
929	**shakkotsusei-** 尺骨製大針 [**daishin**	Knochenahle (aus der ulna eines Wildschweins oder Hirschen)	bone awl (made of the ulna of a boar or stag)
930	**shakōki-dogū** 遮光器土偶	Tonstatuette mit 'Schneebrillen' (Augen mit 'Sehschlitz')	goggle-eyed clay figurine
931	**shakōki-monyō** 遮光器文様	Spaltscheiben-Verzierung; Spaltscheibenkette	pattern consisting of horizontally split discs, in most cases arranged in a row or chain; split-disc pattern; coffee-bean pattern

932	**shakōshi (me)-mon** 斜格子目文	schräge Gitterung schräggestelltes Gittermuster	oblique, diagonal lattice work
933	**shamisen-dōkei-sekifu** 三味線胴形石斧	veralteter Ausdruck für *teikaku-shiki-sekifu*	obsolete expression for *teikaku-shiki-sekifu*
934	**sharin-seki** 車輪石	Steinnachahmung eines *kaiwa*	stone object imitating a *kaiwa*
935	**shasen-iri-sankaku** 斜線入三角	Dreieck mit Innenstrichelung, mit Schraffenfüllung	hatched triangle
936	**shiage** 仕上げ	Ausführung; Oberflächenbehandlung (z.B. der Oberfläche eines Gefäßes)	finishing treatment (e.g. of the surface of a vessel)
937	**shidajō-mon** 羊歯状文	Sammelname für Ornamentstreifen, bestehend aus einigen Hauptmotiven der späten Jōmonverzierung (z.B. S-Haken, T-Motiv, Dreizack), kombiniert mit ausfüllenden Punktreihen	collective term for ornamental zones consisting of contiguously arranged elements of late Jōmon pattern (e.g. S-figure, T-figure, triple-rayed motif), accompanied by rows of punctations filling the intervals
938	**shiga-kakō** 歯牙加工	artifizielle Zahndeformation	tooth mutilation
939	**shiga-suishoku** 歯牙垂飾	Schmuckanhänger aus Zahnmaterial	pendant made from teeth; tusk-pendant
940	**shi-14** しい14 シイ14 *see* **hōshasei-tanso-nendai-sokutei**	C-14	C-14
941	**shijō-chōtō*** 嘴状彫刀	Schnabelstichel	beaked graver
942	**-shiki** 式	Typ(us); Stil, etc. (kein voll zutreffender Terminus in westlichen Sprachen)	type; style, etc. (no adequate term existing in Western languages)
943	**shiki-bō** 指揮棒	Kommandostab 'Pfeilstrecker'	*bâton de commandement* 'shaft-straightener'
944	**shikiishi** 敷石	Steinpflasterung (in einer Wohngrube, einem Steinkreis, etc.)	stone paving (in a dwelling pit, stone circle, etc.)
945	**shikiishi-jūkyo(shi)** 敷石住居（趾）	Wohnplatz mit steingepflastertem Boden	dwelling site with stone-paved floor
946	**shiki-jō** *see* **shiki-bō** 指揮杖		
947	**shikki-jun** 質規準	Qualitätskriterium	criterion of quality (criterion of specific resemblance)
948	**shikon** 指痕	Fingertupfen	finger-tip impressions

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* In most cases read *kuchibashijō-chōtō*.

949	**shikutsu** 試掘	Probegrabung; Versuchsgrabung	trial excavation
950	**shi-kyaku** 支脚	Stützfuß (für Gefäße)	vessel or vase support
951	**shimadagata-** 島田形石斧 **[sekifu**	SteinhackemitSeiteneinzug; geigenförmige Steinhacke	violin-shaped, pandurate axe or adze
952	**shimon** 施文	das Anbringen, Auftragen, einer Verzierung	the application of an ornament
953	**shin-sekki-jikai** 新石器時代	Neolithikum; Jungsteinzeit; Keramikum	Neolithic Age
954	**shinogi** 鎬	jede verstärkende Linie an einer Schwertklinge oder Lanzenspitze, z.B. Mittelrippe	the reinforced part of a sword-blade or spearhead, e.g. the mid-rib
955	**shintai-sōshoku-** 身體裝飾品 **[hin**	Körperschmuck	body ornaments; accessories
956	**shin(ten)-sō** 伸（展）葬	Streckbestattung	extended burial; burial in extended position
957	**Shirataki-gata-funazoko-sekki** 白滝型舟底石器	*Shirataki*-Kerngerät: a) kielförmiges Gravierinstrument mit einem polyedrisch gekehlten Ende (*Yūbetsu*-Technik) b) Gerät wie a) als Ausgangsstück zum Abschlagen von Klein- und Mikroklingen	*Shirataki*-type boat-shaped tool: a) a kind of keeled (core) burin (engraver) with one polyhedrically fluted end (*Yūbetsu* technique) b) artifact similar to (a), used as core for flaking off small and micro-blades
958	**shi-ryō-zoku** 四稜鏃	vierflächige Pfeilspitze	four-faced arrowhead
959	**shiseki-bo** 支石墓	a) Dolmen b) unterirdische Bestattung mit oberirdische Decksteinplatte	a) megalithic dolmen b) subterranean burial with stone slab cover on the surface
960	**shitō-no-akkon** *see* 指頭の壓痕 **shikon**		
961	**shitotsu-mon** 刺突文	Stichverzierung	punctures, punched design
962	**shizen-gaku** *see* 史前學 **senshi-gaku**		
963	**shizen-ibutsu** 自然遺物	Naturobjekte (im Verband mit Artefakten)	natural remains (as finds accompanied by artifacts)
964	**shizen-men** 自然面	natürliche Oberfläche (eines Steins im Gegensatz zur Abschlagfläche); Matrix; Kortex	natural surface (of a stone, in contradiction to e.g. flake surface); matrix; cortex
965	**shizen-sō** 自然層	natürlich ab- oder angelagerte Schicht; natürliche Ab- oder Anlagerung	natural deposit; natural sediment(ation)

966 **shōgeki-ten** 衝擊點	Schlagpunkt; Schlagstelle	point of applied force
967 **shōgun-zuka** 將軍塚	(Lokalbezeichnung mancher Kofun als 'Generals-hügel')	'General's Mounds': local name for some of the kofun
968 **shōkakigata-haniwa** 消火器形埴輪	'Feuerlöscher-Haniwa': Haniwa in Form eines *Tachi*-Griffes (*Tachi:* eine Art Kurzschwert)	'fire-extinguisher haniwa': haniwa depicting the hilt of a *tachi* (kind of short sword)
969 **shōkei-doki** 象形土器	Figuralgefäß	figurative vessel; figure pottery
970 **shokkakugata-tsuka-gashira** 触角形柄頭	Antennengriff (eines Schwertes)	antennae-shaped finial on the hilt of a sword
971 **shokkaku-shiki-tsukagashira** 触角式柄頭 *see* **shokkakugata-tsukagashira**		
972 **shōsei** 燒成	Brand (eines Gefäßes)	firing (of pottery)
973 **shōsekki** *see* **eorisu** 曙石器		
974 **shōshitsu-jūkyo-shi** 沼濕住居址	Moorbau	moorland dwelling site
975 **shūchin-doki** 袖珍土器	Sammelname für kleinformatige Grobkeramik im Tōhoku-Gebiet zur spätesten Jōmonzeit	collective term for small house pottery of latest Jōmon age in Tōhoku area
976 **shūhen-bunka** 周邊文化	Randkultur	marginal culture
977 **shūki** 什器	Hauskeramik	domestic pottery
978 **shūkō** 周湟	Graben um ein Kofun	enclosing moat or ditch (of a kofun)
979 **shumon** 珠文	a) (Bronze-) Knötchenverzierung (auf Bronzespiegeln, etc.) b) manchmal anstelle von *enkeifu-mon*	a) papilla ornament (small pimple-like mounds) on bronze mirrors, etc. b) sometimes used for *enkeifu-mon*
980 **shūraku-shi** 集落址	(urzeitliche) Siedlung (Sammelbegriff ohne Rücksicht auf die Form)	(prehistoric) settlement (collective term, not referring to any special type)
981 **shūsei-zu** 集成圖	Corpus	corpus
982 **shū-sō** 舟葬	Bootsbestattung (als Leichenaussetzung auf einem Boot bzw. das Begraben desselben	boat-burial (exposure of the corpse on a ship or boat, as well as the interment of the boat itself)

983 **shutsudo** 出土	(wurde) ausgegraben gefunden (werden); anfallen	(was) excavated; discovered
984 **sō-bo** 双墓	Zwillings-Kofun	twin kofun; twin tomb
985 **sochi** 素地	Grund (als Rohfläche eines Gefäßes, auf die der Schlikker etc. aufgetragen wird)	ground (of a vessel, on which the slip or painting etc. is applied)
986 **sodenashigata-seki-shitsu** 無袖型石室 袖無型石室	Grabkammer mit nicht (stark) ausgeprägter Trennung von Gang und Kammer (ähnlich *gallery grave*)	burial chamber with no clearly marked difference between corridor and chamber (similar to gallery grave)
987 **sōen-fun** 双円墳	kürbisförmiges Kofun; Zwillings-Kofun in Form einer 8	gourd-shaped kofun; twin kofun; tangential circular knolls like an 8
988 **sōhō-chūen-fun** 双方中円墳 *see* **chūen-sōhō-fun**		
989 **sōi** 層位	die stratigraphische Situation; die Stratigraphie	stratigraphical situation; stratigraphy
990 **sōi-kankei** 層位關係	Schichtenbeziehung	correlation of strata
991 **sōjo** *see* **sōi** 層序		
992 **so(gen)-kei** 祖（原）型	Prototyp	prototype
993 **sokei-fu** 祖形斧・祖型斧	Kernbeil	(mesolithic) pick
994 **sokei-ishibōchō** 祖形石庖丁	'Prototyp des *ishibōchō*': jōmonzeitliches rechteckiges Steintäfelchen (Funktion unbekannt)	prototype of the *ishibōchō:* rectangular stone tablet, Jōmon age (function unknown)
995 **sōki** 早期	frühestes	earliest
996 **sokketsu-** 側欠	mit Kerbe versehen (z.B. typische Kerbspitze des Solutréen)	having a notch or shoulder (e.g. the Solutrean typical shouldered point)
997 **sōkō-doki** 双口土器	U-Gefäß	U-shaped vessel
998 **sōkō-ishibōchō** 双孔石庖丁	Erntemesser mit Doppelbohrung	rice reaper with two perforations
999 **sokuga-sō** 側臥葬	Bestattung in Seitenlage	burial (of corpse lying down on the side as in sleep)
1000 **soku-seki** 側石	Wandplatten (einer Steinkiste, eines Steinsarkophages etc.)	side walls (of a stone cist, sarcophagus, etc.)

1001	**sōkyaku-rinjō-mon** 双脚輪状文	zahnradartig gezackte Kreisfigur mit zwei fußförmigen Fortsätzen (Wandmalerei in einigen *sōshoku-kofun*)	cog-wheel shaped circle with two ribbon-like short projections on the lower edge (wall painting in some of the *sōshoku-kofun*)
1002	**sōmenjō-nendojū-mon** 素麵状粘土紐文 ソーメン状粘土紐文	Tonfadenmuster; Tonleistchenverzierung	applied clay-noodle pattern; design of applied clay ribbons
1003	**so-mon** 素文	a) einfache, kunstlose Verzierung b) bloße Gefäßoberfläche	a) plain and unspecific design b) unadorned surface (of a vessel)
1004	**sonsō** 蹲葬	Hockerbestattung	flexed or contracted burial
1005	**sosei-doki** 粗製土器	Grobkeramik; Hauskeramik	coarse pottery; house-ware
1006	**sosei-kumiawase-shiki-sekkan** 粗製組合式石棺 *see* **kumiawase-shiki-sekkan**	roh ausgeführte(r) Plattensarg oder Steinkiste, etc.	crudely built slab coffin or stone cist, etc.
1007	**sōshin-gu** 装身具	Körperschmuck	body ornaments; accessories
1008	**sōshoku-kofun** 装飾古墳	Kofun mit Wandverzierungen in der Grabkammer	kofun with decorated chamber walls; decorated tomb
1009	**sōshoku-sekki** 装飾石器	zigarren- oder bananenförmiges Steinobjekt mit eingeschnittener Verzierung (Funktion noch unbekannt)	cigar- or banana-shaped stone object with ornamental carvings (usage still unknown)
1010	**sōtai-nendai** 相對年代	relative Chronologie; relatives Datum; relativ-chronologische Stellung	relative date; relative chronological position
1011	**soto-sori** 外反り	konkave (Rücken-) Krümmung (eines Schwertes)	a concave curve (referring to a sword with a concave curved back)
1012	**sudarejō-mon** 簾状文	gestufte Schraffen-Verzierung, zonenförmig angeordnet	discontinuous hatchures design (kind of 'stab-and-drag'), arranged in narrow rows
1013	**Sue-ki** 須惠器	Sue-Keramik, Töpferware der Kofun-Zeit	Sue pottery (kind of protohistoric pottery of the Kofun Period)
1014	**suiden-shi** 水田址	urzeitliches Naßfeld (als rekonstruiertes Gelände)	paddy-field site (reconstruction)
1015	**suichoku-gekida** 垂直擊打	senkrechter Schlag (auf die Schlagplattform)	perpendicular percussion, vertical blow
1016	**suihei-damen** 水平打面	waagrechte Schlagplattform	horizontal striking platform

1017	**suii-keishiki** 推移型式	Übergangsform; differenzierte, aber zusammenhängende Form(en)	transitional form; successive forms
1018	**suishoku** 垂飾	(Schmuck-) Anhänger	pendant
1019	**suishokuzuke-mimikazari** 垂飾付耳飾	Ohrgehänge	ear ornament with pendants
1020	**sukurēpā** スクレーパー	Schaber	scraper
1021	**sukurēpā-gata-ishisaji** スクレーパー型石匙	breiter Griffknopfschaber mit terminaler Schaberkante	stemmed transverse scraper with the edge opposite the stem
1022	**sumōru.burēdo** スモール・ブレイド *see* **kogata-sekijin**		
1023	**supūn-gata-ishisaji** スプーン型石匙	spatelförmiger Griffknopfschaber	spatulate stemmed scraper
1024	**suriishi** 磨石	a) Reibstein b) Glättstein	a) grindstone b) polishing stone
1025	**surikeshi-jōmon** 磨消縄文	Verzierungseffekt durch den Gegensatz von Jōmon-abdruckmuster und figuralen freien Flächen; Jōmon-Glatt-Verzierung	'erased Jōmon pattern': ornamentation created by the contrast of alternate Jōmon-impressed and plain areas
1026	**surikiri-sekifu** 擦切石斧	aus dem Stein herausgeschnittenes Steinbeil, zugeschnittenes Steinbeil, oder ebenso hergestellte Axt	stone axe or adze, shaped by the stone-cutting technique
1027	**surippu** スリツプ *see* **keshō-nendo**		
1028	**sutanpugata-dosei-hin** スタンプ形土製品	stempelförmiges Tonobjekt mit Griffzapfen und ritzverzierter Stempelfläche	stamp-shaped clay object with handle and incised face
1029	**sutōn.sākuru** ストーン・サークル	Steinkreis	stone circle
1030	**suzu-kushiro** 鈴釧	Schellenarmring	jingle-bracelet (i.e. bronze bracelet fitted on the outer edge with several small bells)

T

1031	**tai (bu)** 袋（部）	Tülle	socket
1032	**taido** 胎土	die zur Herstellung von Keramik aufbereitete Tonmasse	paste, i.e. the prepared clay for making earthenware
1033	**tai-jōmon** 帯縄文	Zonen-Jōmon; zonale Jōmon-Verzierung	zoned cord impression

1034	**taijō-mon** 帯状文	zonale Verzierung; Zonenverzierung	zoned, bandlike design or pattern
1035	**tai-kō** 帯鈎	Gürtelhaken; Gürtelschließe	belt fastener; belt hook
1036	**taipu** タイプ	(keramischer) Formenkreis	(pottery) type as norm of classification
1037	**taisoku** 袋足	Hohlfuß; euterförmiger Standfuß (eines Gefäßes)	hollow foot or leg (of a vessel)
1038	**takatsuka** *see* 高塚 **funrō**		
1039	**takatsuki** 高坏	Ständerschale	stem-cup or -bowl
1040	**takotsubogata-doki** 蛸壺形土器	Miniaturtopf mit Rundboden und einer Halswanddurchbohrung, oder durchbohrtem Bodenzapfen (Gefäßhöhe 10 cm)	toy pot with rounded bottom and one wall-perforation at the neck, or with perforated pointed base (height about 10 cm)
1041	**takuhon** 拓本	Abschummerung, Abklatsch	rubbing; ink-squeeze
1042	**takukei-doseihin** 鐸形土製品 *see* **takotsubogata-doki**		
1043	**tamabera** 玉箆	länglichesSchmuckplättchen mit Bohrung (Serpentin)	oblong (serpentine) tablet with a hole at one end
1044	**tamaki** 手纒	Armband, aus aufgefädelten Teilen bestehend	bracelet consisting of a number of parts, e.g. beads, threaded or strung on a cord
1045	**tama-toishi** 玉砥石	Schleifstein für Schmuckstücke	whetstone for polishing gems
1046	**tamentai-chōtō** 多面體彫刀	Polyeder-Stichel	polyhedric graver
1047	**tanda-chōtō** 單打彫刀	Einschlag-Stichel	single blow graver
1048	**tansai(-doki)** 單彩（土器）	monochrom(e Keramik)	monochrome (pottery)
1049	**tanshiki-kamekan** 單式甕棺	(Säuglings- oder Kinder-) Bestattung in einem einzigen Gefäß	(infant) burial in a single jar
1050	**tanso no monyō** 單素の文様 *see* **somon**		
1051	**tanzakugata-(dasei-)sekifu** 短冊形（打製）石斧	zugeschlagenes vierkantiges Steinbeil von nahezu rechteckiger Form	rectangular and four-cornered chipped stone axe or adze
1052	**tare-kazari** *see* 垂飾 **suishoku**		
1053	**tasai(-doki)** 多彩（土器）	polychrom(e Keramik)	polychrome (pottery)

1054 **tataki-ishi** 敲石 *see* **ishizuchi**		
1055 **tatakime** 叩目	Schlagmuster	bat impressions; paddle stamps
1056 **tateana^1** 竪壙 *see* **chika-shiki-kō**		
1057 **tateana^2** 竪穴	a) senkrechte Vertiefung oder Grube, wie Herdgrube, Vorratsgrube, etc. b) Abkürzung für Wohngrube *(tateana-jūkyo-shi)*	a) vertical pit or depression dug into the ground, used as fireplace, storage pit, etc. b) Abbreviation for pit dwelling (*tateana-jūkyo-shi*)
1058 **tateana-jūkyo-shi** 竪穴住居址	Wohngrube; Grubenwohnung	dwelling pit; pit-dwelling
1059 **tateana-shiki-sekishitsu** 竪穴式石室	am höchsten Punkt eines Kofun eingelassene langgestreckte Grubenkammer; Grabenkammer	trench-type burial chamber, sunken burial chamber, in the top of a kofun
1060 **tateana-shiki-sekkaku** 竪穴式石槨 *see* **tateana-shiki-sekishitsu**		
1061 **tateishi-(han-) enkei-retsu** 立石（半）円形列 *see* **kuromulekku**		
1062 **tateishi** 立石	a) Stütz- oder Abgrenzungsmarkiersteine am Rande von Hügelgräbern b) manchmal für Menhir verwendet	a) buttress stones, grave markers, surrounding a burial mound b) sometimes used for menhir
1063 **tateishi-ikō** 立石遺構	'Sonnenuhr':(megalithische) Anlage, bestehend aus einem Zentralmenhir und radial davon ausgehenden liegenden Steinen	'sun dial': (megalithic) construction consisting of one menhir in the centre of radially arranged stone bars
1064 **tatejima-hakuri** 竪縞剥離	senkrechte Kehlung (bestehend aus Abschlagnegativen)	vertical fluting (consisting of flake scars)
1065 **tatō-kanseki** 多頭環石 *see* **tatō-sekifu**		
1066 **tatō-sekifu** 多頭石斧	scharfrandige gezackte Scheibenkeule	discoidal mace-head with sharp-edged spokes
1067 **tatō-sekkon** 多頭石棍	Stern(kopf)keule	spoked mace-head
1068 **teaburigata-doki** 手焙形土器	Verdeckschale; Schale mit Halbkuppeldach	vessel shaped like charcoal hand-warmer; bowl with dome-shaped 'roof'; 'stoup'

1069	**tedama** 手玉	Perlenarmband	bracelet made of a string of beads
1070	**tei(bu)** 底部	Standfläche (eines Gefäßes)	base (of a vessel)
1071	**Tei-Eru-Ví-shiki-kyō** **TLV-shiki-kyō** テイエルヴイ / T L V 式鏡 *see* **hōkaku-kiku-mon-kyō**		
1072	**teikaku-shiki-(masei-)-sekifu** 定角式（磨製）石斧	steinernes (geschliffenes) Vierkantbeil mit planen oder konvex gewölbten Bahnen und Seitenflächen; ebensolche Vierkantaxt	quadrangular stone axe or adze with plane or slightly convex sides
1073	**teikei-sekki** 梯形石器	trapezförmiges Artefakt	trapezoid artifact
1074	**teitaiteki-genshi-bunka** 停滞的原始文化	urtümliche Kultur mit seßhafter Lebensweise	primitive sedentary culture
1075	**tekka** 鐵戈	eiserner Hackdolch oder Stabdolch	iron halberd; iron pick-dagger
1076	**tekken** 鐵劍	zweischneidiges, manchmal einschneidiges, Eisenschwert mit gerader oder leicht S-förmig geschweifter Klinge	double- (sometimes single-) edged iron sword with straight or slightly S-curved blade
1077	**tekkengata-dōken** 鐵劍形銅劍	bronzener Griffzungendolch mit parallelen Schneiden als Bronzeimitation des *tekken*	bronze imitation of an iron *tekken* with parallel edges and tongued hilt
1078	**tekkengata-sekken** 鐵劍形石劍	Steindolch mit Griffzunge und parallelen Schneiden, dem eisernen Vorbild nachgeformt	stone imitation of an iron *tekken* with parallel edges and flat tang
1079	**tekki-bunka** 鐵器文化	eisenzeitliche Kultur	Iron Age culture
1080	**tekki-jidai** 鐵器時代	Eisenzeit	Iron Age
1081	**tekujiri** 手抉 *see* **tezukune**		
1082	**tengu no hanagata-sentei** 天狗の鼻形尖底	gezipfter Spitzboden; Zapfenboden	pointed base of a vessel with spike- or tap-like projection; peg-foot; tap-foot
1083	**tengu no hanagata-totte** 天狗の鼻形把手	Nasenhenkel Griffnase (an einem Gefäß)	nose-shaped handle
1084	**tengu no masakari** 天狗の鉞 *see* **raifu(seki)**		

1085	**tengu no meshisaji** 天狗の飯匙 *see* **ishisaji**	('Hexenlöffel')	
1086	**tensen** 占線	Punktreihe	dotted line row of punctations
1087	**tenshikei-sekifu** 轉子形石斧	Walzenbeil	cylinder axe
1088	**teppu** 鐵斧	Eisenbeil oder -axt	iron axe or adze
1089	**terakotta** テラコツタ	Terracotta	terracotta
1090	**tessō** 鐵槍	a) Eisenspieß mit Schaftangel b) Partisane c) *wie tetsu-boko*	a) iron pike with tang b) partisan c) in some cases same as *tetsu-boko*
1091	**tetsu-boko** 鐵鉾	eiserner Tüllenspieß verschiedener Form, manchmal mit einseitiger Zacke oder Parierscheibe	socketed iron pike(-head) of various shapes, in some cases with a beak on one side, or discoidal guard
1092	**tetsuzoku** 鐵鏃	eiserne Pfeilspitze	iron arrowhead
1093	**tezukune** 手捏ね	Formen (des Gefäßes) aus der Hand	modelling (of the vessel) by hand
1094	**tōban** 當板	Amboß zum Entgegenhalten auf der Innenfläche des Gefäßes während die Aussenfläche bearbeitet wird	block or anvil buttressing the inside of a vessel while it is being stamped or decorated on the outside
1095	**tōdan** 投彈	Schleuderkugel (aus Ton oder Stein)	sling-ball (clay or stone)
1096	**tōfu** 鬪斧	Streitaxt	battle-axe
1097	**togarine** 尖根	schmale eiserne Pfeilspitze (ab mittlerer Kofun-Zeit)	kind of slender iron arrowhead, appearing in middle Kofun Period
1098	**togari-zoko** *see* 尖底 **sentei**		
1099	**tōhōka-yōshiki** 東方化様式	orientalisierender Stil	orientalized style
1100	**Tokachi-ishi** 十勝石	Obsidian	obsidian
1101	**tō-kan** 陶棺	Tonsarg; Tonsarkophag	ceramic coffin or sarcophagus
1102	**tōki (shita) kaigara** 投棄（した）貝殼	Muschelabfall, weggeworfene Muschelschalen in einer Wohngrube etc. (zum Unterschied von einem systematisch angelegtenMuschelhaufen)	mollusc shells and similar kitchen refuse within a dwelling pit (*not* a shell-mound)
1103	**tokki** 突起	Zipfung (des Mundsaums)	peaks (on the rim of a vessel)

1104	**tokutei-ryōiki** 特定領域	spezifisches Verbreitungsgebiet	specific area of distribution
1105	**tomebari** 留針	Fibel; Stecknadel	fibula; pin
1106	**tomo** 鞆	ledernes Armschutzkissen (zum Schutz gegen den Aufprall der Bogensehne)	leather wrist guard; bracer (protecting the wrist against the back-kick of the bow-string)
1107	**tomoegata-dōki** 巴形銅器	bronzener Hakenwirbel mit Zentralbuckel	bronze cogwheel plaque with central boss
1108	**tomoegata-sekiseihin** 巴形石製品	Steinnachbildungen des *tomoegata-dōki*	stone copy of the *tomoegata-dōki*
1109	**tomoegata-tama** 巴形玉	kommaförmige Anhänger (wie z.B. *magatama*)	comma-shaped pendant (e.g. the *magatama*)
1110	**tomogata-haniwa** 鞆形埴輪	Haniwa in Form eines *tomo*	haniwa representing a *tomo*
1111	**torenchi** トレンチ	Graben	trench
1112	**torigata-doki** 鳥形土器	Vogel-(förmiges) Gefäß	bird-shaped vessel
1113	**torosu** トロス	Tholos	tholos
1114	**tosshi-mon** *see* 突刺文 **shitotsu-mon**		
1115	**tossui** 突錐	Ahle	awl
1116	**tōsu** 刀子	handliches Messer kleineren Formats mit etwas gekrümmtem Rücken	small knife with slightly curved back
1117	**tottai-mon^1** *see* 凸帶文 **tottai-mon^2**		
1118	**tottai-mon^2** 突帶文	(aufgetragene) Tonleistenverzierung (oft statt *ryūsen-mon* verwendet)	clay rib ornament (often stands for *ryūsen-mon*)
1119	**totte** 把手	Henkel	handle
1120	**totsuryū** 凸瘤	(Ton)warzen; (Ton)buckeln	(clay) bosses; (clay) warts
1121	**tsubamegata-morigashira** 燕形銛頭	Schwalbenschwanz-Harpune	harpoon-head with swallow-tail or pronged base
1122	**tsubo-kan** 壺棺	Bestattungsgefäß für (Klein-) Kinderbestattung	vessel used as coffin (for infant burial)
1123	**tsuchibue** *see* 土笛 **kūdō-doban**		
1124	**tsuchidama** 土彈子	Schleudergeschoß aus Ton; Schleuderkugel	clay sling-ball
1125	**tsuchigaki** 土搔き	Sammelname für Breithaken aller Art	collective term for all kinds of broad-edged axes or adzes

1126 **tsugikuchi** *see* 注口 **chūkō**		
1127 **tsui-sō** 追葬	Ergänzungsbestattung; Nachbestattung	additional burial (after re-opening of the grave)
1128 **tsu-ji-gata-totte** つ字形把手	(englichtiger) Schlingenhenkel; Schleifenhenkel	loop-handle
1129 **tsūjō-chōtō** 通常彫刀	Mittelstichel	ordinary graver
1130 **tsuka** 柄	Stiel; Griff	handle; shaft; hilt
1131 **tsukaana** 塚穴	volkstümliche Bezeichnung eines *yokoana-shiki-sekishitsu*	popular expression for *yokoana-shiki-sekishitsu*
1132 **tsukagashira** 把頭 柄頭	Schwertknauf	sword pommel
1133 **tsuki** 坏	flache Schale, Schüssel mit oder ohne: Deckel, Rundboden und Standfuß	kind of small dish with or without lid, rounded bottom and stem
1134 **tsukikobu-mon** 突瘤文	Bläschenverzierung (kleine, durch von innen nach außen gerichtete Stiche aufgetriebene Erhöhungen auf der Gefäßoberfläche)	blister ornament (small pimple-like swellings raised by puncturing the vessel-wall from the inner side)
1135 **tsukuridashi** 造出し	zwei einander gegenüberliegende Vorsprünge an den Bühnenflanken mancher *zenpō-kōen-fun*	two opposite projections on the sides of the wing of some *zenpō-kōen-fun*
1136 **tsumegata-mon** 爪形文	Fingernagelabdrücke, -eindrücke	(finger)nail impressions; bracket ornament
1137 **tsumiishi-shiki-mokkaku-shitsu** 積石式木槨室	Bestattung mit hölzernem Sarggehäuse und Steinschüttung (Steinpackung)	burial chamber with wooden sarcophagus and stone (pebble) filling
1138 **tsumiishi-zuka** 積石塚	großer Steingrabhügel; Riesen-Cairn	large cairn (larger than an ordinary one)
1139 **tsunamon-doki** 綱文土器	Seilkeramik; *Tsunamon*-Keramik (Gefäß zeigt über die gesamte Oberfläche spiralig aufsteigende Seileindrücke)	rope-impressed pottery; rope-coiling pottery; *tsunamon*-style pottery (entire surface is covered with horizontally arranged impressions of thick rope coiling)
1140 **tsunogata-chōtō** 角形彫刀	Eckstichel	angle graver
1141 **tsunogata-totte** 角形把手	Stielhenkel; Antennenhenkel (an einem Gefäß)	horn-shaped handle (of a vessel)
1142 **tsuruhashigata-sekki** 鶴嘴形石器	Spitzkeil	stone pecker

1143 **tsuritegata-doki** 釣手形土器	'Blumenkörbchen': Schale mit einem, oder zwei einander kreuzenden, plastisch verzierten Bogenhenkel(n)	flower-basket: bowl, spanned with one or two crossed, heavily ornamented clay handle(s), similar to a hand-basket
1144 **tsutsugata-dōki** 筒形銅器	tüllenförmiges Bronzeobjekt (wahrscheinlich als Hülse auf ein Stockende aufgesteckt)	socket-shaped bronze object (may have served as a finial to a rod or pole, etc.)
1145 **tsutsugata-sekisei-[hin** 筒形石製品	tüllenförmiges Steinobjekt (wahrscheinlich als Hülse für ein Stockende verwendet)	socket-shaped stone object (may have served as a finial to a rod or pole etc.)
1146 **tsuzumigata-dosei-[hin** 鼓形土製品	sanduhrförmiges Tonobjekt (ein *rittai-dosei-hin*)	clay object in the shape of a sand-glass (a *rittai-dosei-hin*)
1147 **tsuzumigata-dosei-mimikazari** 鼓形土製耳飾	sanduhrförmiger Ohrpflock	ear-peg in the shape of a sand-glass

U

1148 **uchikobu** 打瘤	Bulbus, Schlagbuckel (*siehe auch: daryū*)	bulb of percussion (*see also: daryū*)
1149 **uchikobu-rekkon** 打瘤裂痕	Schlagmarke	bulbar scar
1150 **uchimimi-doki** 內耳土器	Innenhenkel-Keramik	pottery with inner lugs
1151 **uchi-sori** 內反リ	a) *siehe: naihan* b) konvexe (Rücken-) Krümmung (eines Schwertes)	a) *see: naihan* b) a convex curve (referring to a sword with a convex back)
1152 **uchiwari** 打割	Schlag (auf den Silexknollen)	percussion; striking; blow
1153 **udekazari** 腕飾	Armschmuck; Armring; Armreif; Armspange	arm ornament; armlet; bangle; bracelet
1154 **udewa** 腕輪 腕環	a) Armreif (geschlossener Ring) b) Armspange (offener Ring)	a) (closed) bangle b) bracelet (open ring)
1155 **ujō-jōmon** 羽状繩文	Fischgräten-Jōmon	pennate or herring-bone Jōmon pattern
1156 **uki** 浮子	(Bimsstein-) Schwimmer	(pumice) float
1157 **ukibukuro no kuchi** 浮袋の口	genannt 'Schwimmer-Mundstück' (Tondüse für aufblasbaren Schwimmer); wahrscheinlich als Bogenschuh verwendet. *Vergl. yuhazu*	'float nozzle' (i.e. nozzle of an inflated buoyant bag); in fact probably used as bow tip; cf. *yuhazu*
1158 **umoregisei-dama** 埋木製玉	aus fossilem Holz hergestellte Polyeder- oder Tonnenperlen	beads made of fossil wood (often polyhedric or barrel-shape)

1159 **usudama** 臼玉	Mörserperle	mortar-shape bead
1160 **usude-ha** 薄手派	dünnwandige Keramik	thin-walled pottery
1161 **usude-shiki-doki** 薄手式土器 *see* **usude-ha**		
1162 **usugata-mimkazari** 臼形耳飾	mörserförmiger Ohrschmuck	mortar-shaped ear-ornament
1163 **uzumaki-mon** 渦巻文	Spiralverzierung	spiral ornament; spiral pattern

W

1164 **wa** 輪	konzentrische Ringe und Kreise auf der Ventralseite des Abschlages	rings, waves on the main flake surface
1165 **wai-ji-gata-doki** Y字型土器 *see* **sōkō-doki**		
1166 **wangata** 椀形	schalenförmig	bowl or cup-shaped
1167 **warabite-tō** 蕨手刀	*Warabite*-Schwert; Eisenschwert mit eingerolltem Griffende; Spiralgriffschwert	*warabite*-type sword, iron sword with volute finial on the hilt
1168 **waritake-gata-mokkan** 割竹形木棺	trogförmiger Holzsarg; hölzerner Trogsarg	trough-type wooden coffin; log-shaped wooden coffin
1169 **waritake-gata-sekkan** 割竹形石棺	trogförmiger Steinsarg; steinerner Trogsarg	trough-type stone coffin; log-shaped stone coffin
1170 **wataguri-shiki** 腸抉式	Pfeilspitzenform: eingezogene Basis und (flügelartige) Widerhaken	type of arrowhead having a hollow base and barbs
1171 **wazumi-hō** 輪積法	Ringwulsttechnik	ring building technique
1172 **wīnasu (-zō)** ヴィーナス（像）	'Venus'(-Statuette)	'Venus' (statue, figurine)

Y

1173 **yajiri** *see* **zoku** 鏃		
1174 **yamagata-oshigata-mon** 山形押型文	Zickzack-Roulette; abgerollte(s) Zickzack-Verzierung(-Muster)	rouletted zigzag pattern; zigzag roller pattern
1175 **yamagata-dogū** 山形土偶	Tonstatuette mit Spitzkopf; Spitzkopfstatuette	clay figurine with triangular head
1176 **yamagata-ryūki** 山形隆起	spitze Mundsaum-Zipfung	pointed projection (on the rim of a vessel)

1177	**yari** 鎗，槍	Lanzenspitze oder Spieß mit Schaftangel	tanged spearhead or pike
1178	**yasu** 矠，魚扠	Fischspeer	fish spear
1179	**Yayoi-shiki-doki** 彌生式土器	Yayoi-Keramik	Yayoi pottery
1180	**-yō** 様	-oid (Suffix zur Bezeichnung der Ähnlichkeit)	-oid (suffix expressing resemblance)
1181	**yōhai-gu** 腰佩具	Gürtelgehänge	pendant or charms worn on the belt
1182	**yoko-ana** 横穴	horizontal orientierte Grabkammer im Fels oder Lehm	horizontal rock- or loam-cut (cave) tomb
1183	**yokoana-shiki-sekishitsu** 横穴式石室	(waagrechte) Ganggrabkammer in einem Grabhügel	(horizontal) corridor (burial) chamber in a burial mound
1184	**yokoguchi-shiki-sekkan** 横口式石棺	hausförmiger Steinsarg mit Seitenöffnung (meist am Kopf- oder Fußende)	house-type stone coffin with an aperture in one of the side walls (mostly in the head or foot wall)
1185	**yokoguchi-shiki-tateana-sekishitsu** 横口式竪式石室	Grabenkammer mit seitlichem Eingang	trench-type burial chamber with horizontal side-entrance
1186	**yokohagi-sekihen** 横剝石片	Flankenabschlag; Querklinge; (Schlagpunkt an Längsseite des Abschlags; sog. Querschlag-, Flanken- oder *Setouchi*-Technik in Westjapan)	side-blow flake (having point of percussion on transverse axis; so-called side-blow flaking or *Setouchi* technique in West Japan)
1187	**yori-himo** 撚紐	(gedrehte) Schnur (zur Erzeugung der Jōmonverzierung)	(stranded) cord (used for applying the Jōmon pattern)
1188	**yoriito** 撚糸	gedrehter Faden (zur Erzeugung von Fadenmustern)	twisted string (used for applying string ornaments)
1189	**yoriito-akkon-mon** 撚糸壓痕文	Fadenabdruckmuster (erzielt durch das Eindrücken eines losen Fadens)	(single) string impressions; string marking
1190	**yoriito-mon** 撚糸文	Schnurwickelabdrücke	string-wrapped dowel impressions
1191	**yō-shiki** 様式	Stilrichtung	form; style
1192	**yōtō-zoku** 羊頭鏃	in Japan erzeugte dreiflächige Bronze-Pfeilspitze	three-faced bronze arrowhead produced in Japan
1193	**Yūbetsu-gihō** 湧別技法 *see* **Shirataki-gata-funazoko-sekki**		
1194	**yūdan-sekifu** 有段石斧	Stufenbeil	stepped adze
1195	**yuhazu (gata-kakusei-hin)** 弭（形角製品）	Bogenschuh (auf die Bogenenden aufgesteckte Spitzen aus Knochen oder Horn zur Befestigung der Sehne)	bow tip (bone or antler tip on the bow's end for fixing the string on it)

1196	**yūhei-shiki-hosogata-dōken** 有柄式細形銅剣	eine Art Vollgriffdolch aus Bronze	slender hilted bronze-dagger
1197	**yūhei-shiki-sekken** 有柄式石剣	Steinimitation des *hiragata-dōken*	stone copy of the *hiragata-dōken*
1198	**yūhei-sōki** *see* **ishisaji** 有柄搔器		
1199	**yūhi-shiki-sekken** 有樋式石剣	gekehlter Steindolch mit Griffangel	stone dagger with channelled blade and tang
1200	**yūjiku-ujō-mon** 有軸羽状文	abgesetzte Fischgrätenzonen; Fischgrätenjōmon in voneinander abgesetzten Bändern	bands of horizontal strips of herring-bone patterns
1201	**yūkaku-sekifu** 有角石斧 *see* **yūkaku-sekki**		
1202	**yūkaku-sekki** 有角石器	axtartiges Steingerät mit runder Schneide, Mittelrippe, zylindrischem Nacken und zwei gegenständigen Ärmchen (aus Axt oder Dolch entwickelt?); steinernes Ärmchenbeil	axe-shaped stone implement with convex (rounded) edge, middle rib, cylindrical butt and two opposite projections (developed from axe or dagger?); stone axe with lateral projections
1203	**yukamen** 床面	Boden (einer Wohngrube)	floor (of a dwelling pit)
1204	**yūkei-zoku** 有莖鏃	Stiel(pfeil)spitze; (Pfeil-)Spitze mit ausgezogener Basis	stemmed, tanged, point or arrowhead
1205	**yūken-sekifu** 有肩石斧	Schulterbeil	shouldered axe
1206	**yūkō-bō** *see* **shiki-bō** 有孔棒		
1207	**yūkō-enban** 有孔円坂	Lochscheibe (als Spiegel-Imitation, Gewicht, etc. verwendet)	perforated disc (used as replica of a mirror, weight, etc.)
1208	**yūkō-masei-sekizoku** 有孔磨製石鏃	geschliffene Steinpfeilspitze mit bis zu drei Bohrungen oberhalb der Basis	polished stone arrowhead with up to three perforations above the base
1209	**yūkō-sekifu** 有孔石斧	a) quer zum Schneidenverlauf perforierte Steinaxt (kein Schaftloch) (China: Yangshao, Lungshan) b) Schaftlochaxt mit breitem Nacken, ähnlich dem donauländischen *Setzkeil* (China)	a) stone axe with a perforation at right angles to the edge (not a shaft-hole) (China: Yangshao, Lungshan) b) shaft-hole axe with broad, straight butt (shape similar to the Danubian *Setzkeil*) (China)
1210	**yūkō-sekifu** 有溝石斧 *see* **ketsunyū-sekifu**		

1211 **yūshi-izen no jidai** 有史以前の時代 *see* **senshi-jidai**		
1212 **yūzetsu-pointo** 有舌ポイント	Stielspitze	tanged point; stemmed point

Z

1213 **za-sō** 坐葬	sitzender Hocker (Bestattung)	contracted burial, in sitting (squatting, upright) posture
1214 **zen-jōmon-shiki-bunka** 前繩文式文化 *see* **sen-jōmon-bunka**		
1215 **zenki** 前期	frühe(r, s)	early
1216 **zenpō-bu** 前方部	der Vorbau, die Bühne, eines Schlüsselloch-Kofun	the wing of a keyhole-type kofun
1217 **zenpō-kōen-fun** 前方後円墳	Schlüsselloch-Kofun; schlüsselloch-förmiges Hügelgrab	keyhole-type kofun or tumulus
1218 **zenpō-kōhō-fun** 前方後方墳	Schlüsselloch-Kofun mit viereckigem Hauptsektor	keyhole-type kofun with quadrangular knoll
1219 **zenshitsu** 前室	Vorkammer (einer Bestattungskammer)	ante-chamber (of a burial chamber)
1220 **zettai-nendai** 絶對年代	absolutes Alter oder Datum; absolute Datierung	absolute date or dating
1221 **zoku** 鏃	(Pfeil-)Spitze	arrowhead
1222 **zoku** 続	Epi-; Retentions-	epi-
1223 **zoku-jōmon-shiki-doki** 続繩文式土器	Epi-Jōmonkeramik	epi-Jōmon pottery
1224 **zugai-henkei** 頭蓋變形	künstliche Schädeldeformation	artificial deformation of the skull

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